THE CHEMIST AND DRUGGIST

VOL. III.] APRIL 15th, 1862. [No. 32.

COMMERCE IN PARLIAMENT.

As a rule, in our editorial capacity we eschew politics. We practically endorse the time-honoured proverb which insists upon "every cobbler sticking to his last." We are of opinion that by so doing we consult the interests of the trade we profess to represent. We are aware there is a tendency on the part of some class journals to depart from this wholesome regulation, and indeed we were much amused with a cotemporary, whose columns are usually devoted to the most prosaic of all avocations, favouring its constituency with a leading article upon the forthcoming Handel Festival. We opine our readers would be somewhat astonished if we occupied our limited space with a critical disquisition upon the "Christy Minstrels," or an elaborate account of the marvellous exploits of the "Bounding Bricks of Babylon." Our especial province is business, and to business matters we generally restrict our comments. However, the legislative proceedings of the last month have presented certain points of more than ordinary interest to the mercantile community, and which has induced us to take an exception to such rule. Commerce is always more or less affected by the Budget, and a few remarks upon the programme of the Chancellor of the Exchequer may not be considered out of place. It is very gratifying to be assured in chaste and eloquent language of the social prosperity of the nation, despite the many disturbing causes which have characterised the past year; but it is *not* so satisfactory to be informed that the surplus is so small as to admit of only an insignificant remission of taxation. The income tax, which presses heavily upon the industrial classes, will still remain a source of inquisitorial vexation, and the chance of a speedy reduction of expenditure is as remote as the late lamented Colonel Sibthorpe could have desired. After a speech of some hours' duration, the only consolation offered by Mr. Gladstone was, that "Bad harvests, distress in the country, great commotions abroad, may bring upon us the evils of fresh taxes, or the still greater evils of loans. Good harvests and favourable circumstances abroad may carry us on with our present taxation; but that, if we really hoped to effect remissions of taxation, those remissions are not to be had compatible with the maintenance of the financial credit of the country, except by cautious, judicious and gradual, but yet resolute attempts to apply to the departments of our public service the principles of true and strict economy.

We are much obliged for these admirable suggestions, but when are these halcyon days of administrative retrenchment to commence? We are aware that taxation is a disagreeable necessity, but the new financial arrangements submitted to the House of Commons would be simply ludicrous, if they did not indicate a source of grave anxiety. No prudent margin is allowed for possible contingencies, and in case any European or American complications should ensue, a polite intimation is conveyed that a supplementary Budget may be expected. The fiscal changes proposed are few, and possess the advantage of extreme simplicity.

The Tea and Sugar duties remain intact, although the manufacturing industry of the country is in a distressed and crippled condition. The duty on *Playing Cards* is to be mitigated, and of course we should be grateful for such important relief! A tax of one-eighth per cent. is to be imposed upon Foreign Loans; a measure, however, which will meet with ready approval, as at present no English Company can issue its scrip without a stamp, nor its debenture until it has passed through the ordeal at Somerset House. It has hitherto been a gross injustice that foreign borrowers should enjoy an immunity from duties, which we ourselves pay when a loan is negotiated. The penny tax on imports is to be abolished as soon as the Revenue will justify the alteration, but the one shilling and sixpence on Bills of Lading is retained. There is to be a modification of the Wine Duties, and a re-adjustment of the scale of Brewers' Licences. The Hop Duties are to be conceded, and private individuals who practise a wise economy in brewing their own beer, must pay a licence of 12s. 6d. for that luxury, provided their rental is over £20 a year. We are not favoured with any explanation as to how this latter impost is to be levied, and it will certainly be a source of permanent irritation if our homes are constantly liable to invasion by officious excisemen. On the whole, however, little opposition will be urged to the measures, and it is in vain independent members indignantly raise their voices against the lavish manner in which the public funds are dispensed.

However, it appears Government is not destined to have all its own way this session, as Mr. Sheridan defeated them triumphantly on his motion for a reduction of 33 per cent. of the duty on Fire Insurance. One hundred and twenty-seven members affirmed the principle of this bill. It is curious how this impolitic tax upon thrift should so long have escaped denunciation, and this decision will doubtless result in its ultimate remission. Theoretical financiers fail to realise how hard it is to persuade a man that there is any necessity for demanding four shillings and sixpence in order only to get one and sixpence in value. In fact, this imposition is a direct encouragement to recklessness, and the sooner it is expunged from the Statute Book the better.

A select Committee has been appointed upon the motion of Mr. W. Ewart, "to consider the practicability of adopting a simple and uniform system of weights and measures, with a view not only to the benefit of our internal trade, but to facilitate our trade and intercourse with foreign countries." We need not dilate upon the manifold advantages which would be derived if such a desirable end can be achieved. It is only requisite to remember the endless confusion caused by the diversity of measures dependent frequently upon local custom, to point out the necessity for some permanent change.

THE TWO CLASSES OF CHEMISTS AND DRUGGISTS.

THE first toast proposed at the first anniversary meeting of the United Society has broken the charm which hung over the great house in Bloomsbury Square, and the Pharmaceutical sleepers are now wide awake. For proof of this we refer the reader to the article below which we extract from the last number of the *Pharmaceutical Journal*. It will be seen that our challenge has been accepted, for the Bezonian has spoken. We do not believe, however, that the speaker gives expression to the opinions of the Pharmaceutical body, for his argument against free trade is too much like the echo of an article in the *Lancet*. Still, as the Journal is the organ of the old Society, we must at present take it for granted that Alderman Dakins' toast—"Free Trade for Chemists and Druggists, and protection from unnecessary Legislative interference," constitutes the shibboleth by which the one section of the trade is to be distinguished from the other. The article is headed "Pharmaceutical Responsibility *versus* Free Trade in Physic," and runs thus:—

"It is well known to the readers of this Journal, and it ought to be more generally known and distinctly avowed by the medical profession and the public at large, that for more than twenty years a considerable and very influential section of the Chemists and Druggists of this country have been making strenuous exertions for promoting the attainment of a high degree of professional qualification by those who are engaged in the practice of pharmacy. Among the successful results of these exertions have been the establishment of the Pharmaceutical Society, with ample means for extending pharmaceutical education, and the enactment of a law recognising the beneficial tendency of the objects of this Society, and securing to its members and those similarly qualified, the exclusive use of the title of Pharmaceutist or Pharmaceutical Chemist. On the other hand, among the unsuccessful results of the exertions made, has been the failure to induce all or even a majority of existing Chemists and Druggists to co-operate in carrying out the proposed object, or even to recognise the necessity or importance of requiring from those who deal in dangerous medicines or poisonous substances that they should prove by the test of examination that they are qualified for such a responsible duty.

"The body of Chemists and Druggists has thus become divided into two classes, consisting of, firstly, those who are legally recognised as qualified Pharmaceutical Chemists; and secondly, those who have no such recognition or legal qualification. Those of the second class still call themselves Chemists and Druggists, while the former have generally adopted their distinctive title of Pharmaceutical Chemist.

"It was very natural that the Chemists and Druggists who, after repeated solicitations, have persisted in refusing to join in acknowledging the necessity for a test of qualification, should be anxious to justify their separation from the class of qualified men; but it is much to be regretted that in doing this any ill-advised members of their class should advocate the doctrine of free trade in physic. If this means anything, it means that any man, however ignorant, is justified in carrying on the business of a Chemist and Druggist, supplying the public with dangerous substances the properties of which he may be unacquainted with, and dispensing medicines for the sick.

"The doctrine of free trade in physic, and the advocacy of unrestrained liberty to supply the public with dangerous drugs and poisons, have not, that we are aware of, been adopted by the Pharmaceutical Society, and we trust they never will be; on the contrary, the efforts of this Society have frequently been directed in an opposite direction.

"We feel assured also that this doctrine will not receive the sanction of the Legislature or of that portion of the public comprising those who have well considered what the influence of its adoption would be upon the practice and the science of medicine, and both directly and indirectly upon the public health.

"The evils of free trade in physic and poisons have frequently been referred to in this Journal, and also in the medical and public journals. The responsible nature of the duties of the Chemist and Druggist cannot be denied, and the necessity for a thorough practical and scientific qualification for these duties is every day receiving a more general recognition among all classes.

"Even now the Government require that all those who are employed in dispensing medicines for the army shall have proved their qualification by an examination before the Board of Examiners of the Pharmaceutical Society. Others may be equally qualified, but until they have submitted themselves to the test of examination, their light is hidden beneath a bushel, and they are not therefore entrusted with the responsible duty of administering powerful agents upon the action of which the life or death of so many human beings is daily depending."

CHEMISTRY AND PHARMACY AT THE INTERNATIONAL EXHIBITION.

By C. W. Quin, F.C.S.

SUPERINTENDENT OF CLASS II. (CHEMICAL AND PHARMACEUTICAL PRODUCTS.)

When the scheme of the Exhibition of 1851 was first proposed, it was seriously contemplated to exclude chemicals and drugs altogether, as being uninteresting to the general public. But as time wore on, mature reflection showed that the Exhibition was intended to serve another purpose than that of merely amusing a mass of sightseers with the display of a number of pretty things. There were sections of the community for whose individual, as well as collective benefit, the great idea was first started, and it was decided that chemical and pharmaceutical products should be admitted. This point having been settled it was next discussed whether substances of every day use should be exhibited, or whether space should be given to those only which presented some striking peculiarity or novelty. This was likewise overruled, it being considered that the Exhibition was addressed to the whole world, and that the drugs and chemicals which were used daily in our country, might be utterly unknown in another. Subsequent events proved the wisdom of these decisions, for not only was

Class II. one of the most attractive to the men of science, but ladies were to be seen continually admiring the splendid colours of the groups of crystals, and examining their wondrous forms with interest.

The total number of exhibitors of chemical and pharmaceutical products in 1851 was 270, of whom one-half were British. In taking a hasty glance at the substances exhibited, it will be as well to divide them into—

1. Chemicals proper.
2. Rare products.
3. Dyes and pigments.
4. Chemical manufactures.
5. Pharmaceutical chemicals and drugs.

1. *Chemicals proper.* These were pretty fairly represented, especially in the British department, where the larger chemicals, such as alum, the prussiates, &c., were particularly fine and perfect, indicating a high state of purity. Some excellent specimens of amorphous phosphorus were sent in by Messrs. Sturge, of Birmingham, which were looked upon with great interest, amorphous phosphorus having engaged public attention a great deal about that time. Iodine was well shown by Ward and Co., of Glasgow; Ward, of Ramelton, Donegal; and Cournerie, of France. A specimen of bisulphide of carbon, exhibited by Dr. Marquart, of Prussia, also attracted attention, having been only just applied to electro-plating. Borax and boracic acid were well represented by Count de Larderel, of Tuscany, who owns and works the boracic lagoons of that country. The ingenious and original manner in which this gentleman had availed himself of the natural heat of the earth in the neighbourhood of the lagoons for the evaporation of the boracic liquid, and the general energy and perseverance he had displayed in the establishment and development of this branch of manufacture, entitled the Count to a council medal. Messrs. Dentith and Co. received a prize medal for their fine specimens of bichromate of potash. The prussiates of potash were exhibited in great perfection and beauty, by Messrs. Bramwell; the Hurlet and Campsie Alum Company; the Bouxvillier Company of France, and Mr. Schlippe of Russia. Alum also received adequate representation from Messrs. Spence, Moberly, and Wilson, and the Hurlet and Campsie Alum Company, each carrying off prize medals. Some fine specimens of copperas and carbonate of soda were also exhibited.

2. *Rare chemical products.* Many chemists seemed to think that it was necessary to exhibit "sensation" products amongst their ordinary ones. Some of these were remarkably interesting, and showed that English chemists knew how to do something more than produce ordinary salts by mere rule of thumb. A fine specimen of caffeine, exhibited, amongst other things, by Mr. T. A. Spencer, attracted great attention, and gained a prize medal for the exhibitor. Batker and Brosche, of Prague; Burt, of London; Corridi, of Tuscany; Hopkin and Williams, and Morsons, of London; Leroux of France, and several others, received prize medals for their productions.

3. *Dyes and pigments.* A remarkably complete collection of paints was exhibited by Messrs. Blundell and Spencer, of London, which was justly rewarded with a medal. Messrs. Winsor and Newton pursued the same course with artists' colours, with a similar result. Zinc white and white lead of excellent quality were sent in by Messrs. Lefevre, of France; Von Hubert, of Austria, and Bischoff and Rhodens of Bonn, who received prize medals. Mr. I. L. Bell, of Newcastle, exhibited an oxichloride of lead, which forms a pigment of great brilliancy and durability. Although the collection of Messrs. Winsor and Newton, just mentioned, bore off the palm in point of completeness, the specimens of pigments shown by Messrs. Rowney and Reeves were thought worthy of honourable mention. Several fine specimens of artificial ultramarine were exhibited. Mr. Guimet, of Lyons, the inventor and first manufacturer of this pigment, received one of the four council medals given in this class. Others exhibited the same material, and received prize medals for excellence. The display of dyes and dye-stuffs was generally meagre. In detail, however, there were some very fine specimens: notably, the collections of lichens and their products exhibited by Messrs. B. Smith and Sons, and Wood and Bedford. The only novelty of importance was garancine, exhibited by the Chamber

of Commerce of Avignon. In the way of dyes and dye-stuffs, the Exhibition of 1862 will present a most favourable contrast to that of 1851. Dyes of every kind, indigo, lichens, naphthaline, aniline, will be all well represented, and will be in a great measure the *pièce de résistance* of the industrial portion of the class.

4. *Chemical manufactures.* Specimens illustrative of these were but few, and from being distributed in other classes it is difficult to form a correct idea of their importance. Blacking had but two representatives, neither of whom was found deserving even of honourable mention. Lucifer matches were exhibited by three manufacturers; those made of Schrötter's amorphous phosphorus attracting much attention.

5. *Pharmaceutical chemicals and drugs.* Foremost among these came the preparations and drugs exhibited by the London druggists, under the direction of the late Jacob Bell. These were systematically arranged, and afforded much information to both English and foreign visitors. The collection of the cinchona alkaloids and their salts by Messrs. Howard and Kent was very fine. Messrs. Huskissons exhibited a collection of the principal salts used in pharmacy. Messrs. Morson contributed several vegetable alkaloids and their salts, and Messrs. Bullock some fine specimens of iron and ammonia salts. Altogether the pharmaceutical portion of Class 2 was more complete and systematic than any other section.

The above remarks on the Exhibition of 1851 are necessarily brief, but they will form a pretty correct standard of comparison by which to judge of the events of this year's display. Although the Eastern Annexe was several weeks behind the other part of the building, an amazing amount of work was done in a small space of time by the exhibitors in this class. Most of the fittings are now finished, and in a few days more the whole of the articles to be exhibited will be in their places. At first it was feared that this portion of the building would not be ready in time for the opening, but the exhibitors in this department, although they received their summonses to take possession of their space some weeks later than several other classes in the centre of the building, obeyed the sudden call with the greatest alacrity, and are now in a most orderly condition as compared with others who commenced their work many weeks before. The contributions of nearly all the large houses are arranged, it being only the smaller men who hang back, as is usually the case on such occasions. Foundations are being laid for two enormous alum crystals, to be sent by Mr. P. Spence and the Metropolitan Alum Company. These monster productions will weigh four or five tons each, and will not be sent in until the last week, in order that all obstructions to their triumphal entry may be removed. The trophy of crystal, under the direction of Mr. S. Howard, the Chairman of the Metropolitan Committee, is progressing. This also will not be arranged till the last moment, in order that the best effects of colour may be obtained. Most of the large exhibitors have failed to take advantage of the permission given by Her Majesty's Commissioners to affix prices to their articles. Some allege as an excuse that prices fluctuate, but it would be easy to quote prices on a certain date, the 1st of May for instance. This is really a very important matter, and should be attended to as one of the great features of this year's Exhibition, it being an undoubted fact that we can beat the foreigners in price if in nothing else, which is the humblest way of putting the matter. Amongst the more remarkable products to be exhibited, are an extensive series of rosaniline salts, including several crowns of acetate of rosaniline, containing a perfect octahedron as large as a finger-nail, contributed by Messrs. Simpson, Maule, and Nicholson. Messrs. Bullock and Reynolds have prepared an almost perfect series of bile products, which will be most interesting to scientific chemists. Dr. Stenhouse, too has been hard at work at new alkaloids and proximate principles. It is expected that Mr. Rumney's collection of dyeing and printing materials will contain the specimens of madder products exhibited by Dr. Schunck at the last meeting of the British Association. Messrs. Perkin send a new colour, which is at present a mystery in every way, except that it is very beautiful. Several manufacturers of fine chemicals have applied for and received permission to arrange their own products a few days before the opening of the Exhibition. Great precautions have been exercised with regard to fire, and a series of stringent regulations have been drawn up by the superintendent of the class with respect to the amount of inflammable substances to be exhibited, and the means to be employed to avoid all possibility of accident. The coal oils, petroleum, paraffin oil, *et hoc genus omne*, have been wisely excluded; an effort will, however, be made to bring specimens of these products under the notice of the juries. It would of course be premature to give any account of the articles already sent in; it will be sufficient to observe that they are fully up to the mark, and it may be safely predicted that in chemicals, at least, England will show herself to be unequalled.

MUSTARD AND STARCH.

A DAY AT THE CARROW WORKS, NORWICH.

THE annals of our country are written in characters which fade but slowly under the corrosive breath of Time. We can read the wondrous story of England in the earthwork and masonry of successive generations, just as we may trace the growth of a tree by the concentric layers of wood. The mystic stone circles of the Druids, the hard roads and deep camp trenches of the Romans, the frowning castles of the Saxons and Danes, and the noble cathedrals of the Normans, are grand memorials of the nation's origin. Such substantial vestiges of our ancestors, with the more recent examples of ecclesiastical, municipal, and domestic architecture, form a complete chain connecting the bright present with the dim past.

This thought is forced upon me as I thread the winding streets of the good city of Norwich, where but few links are wanting in the chain of antiquities. The place has been an important centre of life and industry for thirteen centuries, and as I survey the motley aggregate of buildings, I seem to see the history of those centuries fossilized. I should much like to pry into the nooks and corners of this old city, but I have travelled thus far from the sound of Bow bells with a very different object. I am here, not to study the works of dead generations, but to examine into the industry of the living. A great factory, situated in the suburb called Carrow, claims my attention to-day. While walking thither, however, I may indulge my vein, and allow my thoughts to sail up the stream of history. On reaching the brow of the hill overlooking Carrow, I come upon some picturesque ruins of the embattled wall of flints with which mediæval Norwich was fortified. The wall was completed more than five hundred years ago, and even then the city was noted for its woollen manufactures, as a large number of skilful weavers from the Low Countries had settled in the place. Before the foundations of the wall were laid, a Benedictine nunnery was established on the plain below, and some crazy fragments of the buildings are still visible. In the days of this religious house, Carrow was a calm retreat, and the vesper-bell was heard by few besides the prioress and her nine nuns. At the present time, the aspect of the place is not suggestive of religious seclusion, for the principal feature in the landscape is a grand mass of brick buildings with three tall chimney shafts, forming the Mustard and Starch Works of the well-known London firm of J. and J. COLMAN. I survey this unmistakeable sign of modern activity and enterprise with intense satisfaction; for on contrasting it with the ruins in the neighbourhood I obtain incontestable evidence of England's progress. While in my retrospective mood I remember that mustard—one of the chief products of the factory below—is a very ancient condiment. It has been eaten with the good roast beef of this country ever since the Roman invasion. The cooks of ancient Rome prepared it for the table with the unfermented juice of the grape; hence it was called *mustum ardens* (hot must), from which term the English word "mustard" and the French "moutarde" are derived. It must not be supposed, however, that the invaders of Britain were the first eaters of mustard, for they originally obtained the condiment from Egypt, where it had been in common use from the most remote time. The history of the mustard-pot, therefore, commences ages before the history of Norwich, even though we connect this city with the Roman station of Venta Icenorum, or Caistor, from which it may be said to have arisen. An old distich records that

> "Caistor was a city when Norwich was none,
> And Norwich was built with Caistor stone."

I must loiter no longer outside the factory, for I understand that it is a good day's work to inspect the various departments. On entering the gates I cannot help being impressed with the magnitude of the establishment, and am reminded of those great hives of the North, the cotton factories. There are four large blocks of buildings divided by broad streets, and many minor structures which serve as offices and workshops. The river Wensum washes the lower portions of two of the main blocks, and as this stream is navigable for vessels of 120 tons, the advantages of the situation which the Messrs. Colman have chosen are obvious. A railway has been laid down in the principal street or avenue, and I am informed that this connects the factory with the Eastern Counties line.

The resident partner receives me with the unstrained courtesy which is so characteristic of an English gentleman. He knows my mission, and is prepared to devote the entire day to the elucidation of the processes carried on in the works. With a guide so competent, I have no reason to fear mystification, however numerous or complicated the operations may be. We commence our round of inspection with the warehouses in which the raw materials of the mustard manufacture are stored. Here I find just such an assemblage of sacks as may be seen in any great corn warehouse; but on peeping into these sacks I discover either the brown or white mustard seeds. The brown seeds are very minute, each being but little bigger than the head of an ordinary-sized pin. They are the produce of the Black Mustard, the *Sinapis nigra* of botanists, which is extensively cultivated in the vicinity of Wisbeach. The white seeds, which are familiar to all growers of small salad, come from the species *Sinapis alba*, which is principally raised in Essex and Cambridge. The average price per bushel of the brown seeds is about 15s., and of the white seeds 12s. Mr. Colman informs me that he has occasionally given as much as 34s. a bushel for the former, and 23s. for the latter. The seeds only appear in the markets of Wisbeach and Mark-lane once a-year, and the few manufacturers who use them are consequently compelled to keep large stocks. To preserve them for a long period is a task which the farmers have hitherto failed to accomplish, but in these warehouses the temperature and ventilation are so carefully regulated that the seeds will remain unchanged for years.

The preliminary operations of cleansing and drying the seed are performed by means of the ordinary dressing machine and kiln. That so much dirt should be rubbed and blown off those little seeds which look so clean is something really surprising, but beyond this there is nothing remarkable in the dressing process. The kiln is precisely similar to one used for drying corn, being a heated chamber floored with wire-gauze; on looking into it, however, I am charmed with the novel appearance presented by the thick layer of tiny seeds which covers the entire floor.

We now enter the main building of the Mustard Works, and Mr. Colman directs my attention, in the first place, to the sieves which are employed to separate the flour of the seed from the husk. These sieves are all formed of silk tissue, and are very costly instruments; some are of extraordinary fineness, indeed one which was shown me calls up the absurd image of a tambourine made with a slice of London fog instead of parchment. The room in which these sieves are used is now exposed to view, and for a few moments I am utterly bewildered with the rapid movements of the workmen and the machines. The men so uniformly coloured with the yellow dust remind me of the demons of a pantomime, but what they are doing baffles my comprehension. By attending to one thing at a time, I daresay I shall be able to detect order in this scene of apparent confusion. On one side of the room is a series of vertical rods of wood, each of which has a bulb of iron at its lower extremity. These rods are continually jumping up and down like the beams of an old-fashioned stamping-mill. They jump to some purpose, too, for beneath them is a corresponding series of strong iron vessels or mortars, which are all partially filled with bruised mustard-seed. Though these iron-shod rods puzzled me a little at first by their peculiar action, they are obviously merely steam-worked pestles. Before being subjected to the ill-usage of these unfeeling bruisers, the seeds are crushed between iron rollers to separate the fixed oil. The workmen who superintend the pounding machines are continually adding the crushed seed or removing the finished powder, and it is only by watching them narrowly that I find out how they contrive to escape the hard blows of the pestles. When a man has to put his hand into a mortar, he gives the ascending pestle an upward jerk, which slightly increases the length of its stroke, and brings it under the influence of a simple catch. When he has adjusted the contents of the vessel to his satisfaction he releases the catch, and down comes the pestle as before. The pounded material, consisting of both the flour and the bran of the mustard-seed, may be seen on every side, in great heaps of a golden yellow colour. To part the chaffy scales from the impalpable powder is the object of the process which now claims my attention.

This process is a very common one, being simply that of sifting; but, as with the pounding, steam-power here supplies the place of muscular force. The sieves are arranged loosely in frames, to which a rapid eccentric motion is given by means of revolving shafts. Each frame will hold eight sieves, and may be looked after by one man. I cannot help contrasting the characteristic movements of the two kinds of machines at work in this room. The pestles on one side seem to be continually practising the monotonous jumping dance of "The Cure," and the sifting frames opposite to be suffering from some horrible nervous affection. The mustard flour is shaken through many sieves of different degrees of fineness, and when it leaves this room the remains of the seed-coat are only visible to the microscopic eye.

The brown seeds and the white are never operated upon at the same time, as it is important that the two sorts of mustard should be mixed in definite proportions. The flour of the brown seed is far more pungent than that of the white, and is the essential constituent of the condiment. A mixture of the two sorts is, however, generally considered more palatable than the simple brown mustard flour. The mixing of the different kinds is a mere repetition of the sifting process.

The public generally suppose that it is impossible to obtain genuine mustard. Such, however, is not the case; for although it is not denied that some of the qualities, to suit the tastes of consumers, are prepared with a certain admixture of the finest wheaten flour and a very minute proportion of turmeric, Messrs. Colman's mustard can be procured perfectly genuine. Most of it is sent from the factory in sealed tins, packets, and bottles, every one of them bearing the autograph of the firm and that trade-mark—so suggestive of roast beef—the Bull's Head. The absolutely pure mustard is labelled "warranted pure;" that which has had its pungency reduced by a small addition of wheaten flour bears the truthful inscription, "This mustard condiment is warranted free from any injurious admixture."

I am now shown the packing-room, where a number of men and boys are performing feats of dexterity, far more surprising than the sleights of Robin or Frikell. I see a plain sheet of tin-foil suddenly become a shapely case; but the manner in which the lad performs the trick quite escapes my observation. The cases and tins are filled, and then labelled with equal adroitness. The white, unblistered hands of the packers remind me of a peculiar fact connected with mustard. In the seeds or dry flour chemists do not find the acrid principle for which mustard is so remarkable. The flour must be wetted before we can enjoy it as a condiment, or make use of it for a poultice. The pungent, volatile oil of the black mustard, and the biting acrid liquid of the white, both result from the action of water on some of the constituents of the seeds. The fixed oil, which is expressed from the seeds, is quite devoid of acrimony or pungency, and can scarcely be distinguished from rape oil.

We now proceed to another building to witness the manufacture of a by-product. I saw in the sifting room an abundance of what may be called mustard bran—the broken skins of the seeds. This I looked upon as mere waste, but now—to my great astonishment—I observe a number of workmen busily engaged in converting it into manure-cake. The process is interesting and somewhat ludicrous. Several long stocking-like bags are filled with the bran, and then piled one above another in an hydraulic press. The pump is worked, and the well-filled stockings are gradually squeezed flat, while little streams of oil trickle down the press into a reservoir below. The action of the press is now reversed, and the cakes are lifted out one at a time, and handed by the press-man to his attendant. The latter, on receiving one of these flattened limbs, rests it on a support and pulls off the stocking. The leg thus exposed to view is about the size, and has nearly the shape, of a tailor's sleeve board. Having likened the cake to a leg, I feel rather uncomfortable when the workman pares the edges with a knife; but I find that the appearance of the mangled limb is greatly improved by the operation. The cake is now ready for the market, and will fetch a good price, as it forms a valuable manure, particularly for land infested with the wire-worm. The oil expressed from the bran is similar to that obtained from the seeds in the preliminary crushing process. My conductor now shows me the spacious warehouse in which the fixed oil is stored, and I here complete my examination of the mustard manufacture.

An immense number of hands are employed at this factory in making the tins in which most of the mustard of the firm is packed. I am shown many labour-saving machines for cutting the metal into the required shapes; and, lastly, I am introduced to a large, well-lighted workshop, in which the operations of shaping, fitting, and soldering the tins are performed.

Leaving this room, we return to the cosy office, and rest awhile before inspecting the Starch Works. To prepare my mind for the new set of impressions, I look over the following notes which I jotted down in my pocket-book before leaving home:—

Starch, or Fecula, is one of the most important and widely-diffused of the vegetable principles, being found, to a greater or less extent, in every plant. It is most abundant in those seeds which constitute corn and pulse, in certain roots and tubers, and in soft stems. From these sources the starch may usually be obtained by rasping or grinding to pulp the vegetable structure, and washing the mass upon a sieve, which will retain the torn cellular tissue, but allow the fine starch to pass. Potatoes treated in this manner yield a large proportion of starch. From grain, a very fine description of starch may be procured by a similar process. Wheaten flour, when mixed with sufficient water to moisten it thoroughly, forms a smooth, elastic, and tenacious dough. Now, if some of this dough be placed on a piece of muslin, strained over the mouth of a large glass vessel, and be worked with the hand under a stream of water as long as the water passes through milky, there will remain at last upon the muslin sieve a white, sticky substance, called *gluten;* and when the milky water has become clear by standing, a white powder will be found at the bottom of the vessel. From 100 parts by weight of fine English flour, about 70 parts of the white powder, which is pure starch, may be thus obtained. This simple mechanical process is, however, quite obsolete. In manufacturing wheaten starch on a large scale, the raw material is steeped for a considerable period in water, so that the *lactic acid*, always developed under such circumstances from the sugar of the seed, may partially dissolve the gluten, and thus facilitate the separation of the starch. A few years since, all the starch used in the country was made from wheat, but latterly other raw materials have been employed, the most important being rice. To obtain starch from rice, it is necessary to employ a very dilute solution of *caustic soda* for disintegrating the cellular tissue of the seed. To the naked eye starch presents the appearance of a soft, white, and often glistening powder; under the microscope it is seen to be altogether destitute of crystalline structure, but to possess, on the contrary, a kind of organization, being made up of multitudes of little transparent bodies, generally rounded, upon each of which a series of concentric rings surrounding a central spot may often be traced. The starch granules from different plants vary greatly in magnitude; those from the tubers of the Canna, a West Indian plant, being the largest, and those from rice the smallest. By means of a microscope sufficiently powerful, any kind of starch may be easily distinguished from the others by the shape and size of the granules and the peculiar markings which they exhibit. In the mature grain of rice the granules are densely packed and firmly united; hence the gritty character of rice-flour; hence, also, the necessity for employing such a powerful agent as caustic soda to disintegrate the grain. Though starch be washed again and again in cold water, the granules retain their characteristic form; but when a mixture of starch and water is heated to near the boiling point of the latter, the granules swell and burst, producing, if the proportion of starch be considerable, a thick gelatinous mass. The term *amidine* has been applied to this peculiar jelly of starch.

With this book-knowledge I commence my survey of the starch factory. Though still accompanied by Mr. Colman, I now consider myself under the guidance of the intelligent manager of this department, whose lucid and detailed descriptions of the various processes prove him to be a master of both the theory and practice of starch-making.

The raw material of this interesting and beautiful manufacture is chiefly rice, the produce of that widely-cultivated grass which botanists name *Oryza sativa.* The small grains grown in Madras and Bengal are usually employed for the sake of economy, but any of the forty or fifty varieties of rice known would yield nearly the same proportion of starch. The rice used in this particular factory is floated up the Wensum, and hoisted directly from the vessels to the upper story of the building. Here I am shown the coarse Indian bags containing the raw material which we are about to follow through the establishment. Having no desire to descend head-foremost down a wooden shoot, we choose a different path from that taken by the rice, and reach the floor beneath by the aid of a flight of stairs. Here I see a number of huge iron cisterns, in which the "liquor," or solution of caustic soda, is prepared. Under these, on another floor, are the vats in which the rice is acted upon by the alkali until the hard grains are rendered so friable they may be rubbed to a powder between thumb and finger. It is cheaper, however, to use millstones worked by steam than to employ innumerable thumbs and fingers for rubbing down the grains. The steeped rice is ground with water, and from each pair of stones runs a continuous stream of the starch material, which now appears as a thick, creamy liquid. My conductor, in showing me this new product, proudly calls my attention to its remarkable smoothness, a quality which bears witness to the perfection of both steeping and grinding processes. He laves his hand in the white stream with evident satisfaction, and raising some of the product in the hollow of his palm, he examines it with the critical eye of an expert.

The creamy product, which contains all the insoluble constituents of the rice in a finely-divided condition, is now placed in deep tanks called "separators," and mixed with a large proportion of water. Each tank is provided with a long narrow window of plate-glass, through which the contents can be seen; and inside each there is an agitator, to which a rapid motion may be given at any time by connecting it with the train of machinery which runs through the factory. The cream of rice is first agitated in these tanks until its particles are well diffused through the water. The agitators are then stopped, and gravitation is allowed to do the work of separation. The particles of skin, fibre, and gluten slowly subside, leaving the minute starch granules suspended mechanically in the water. When the separation is complete, the starchy water is decanted from the sediment, and pumped up through tubes of gutta-percha to immense shallow vats in the upper part of the building. These vats, which are called "settling becks," cover a large area, and as they are fixed within a very few feet of the roof, I find my stooping-walk around them somewhat fatiguing. My two guides get along pleasantly enough, for they know when to stoop and when to walk upright; besides, happily for them, they do not wear chimney-pot hats. On reaching the last of the becks, my practical friend bares his arm and fishes up a handful of the deposited starch, which looks like a mass of fresh curd. He tells me that the settling becks are all lined with zinc, that they are re-filled with the starchy water every day, and that the deposited starch is cleared out twice a-week.

The mixture of fibre and gluten left in the separators is sold at a good price as pig-food. As, however, the pig-keepers in the neighbourhood cannot use up the whole of the product, a set of hydraulic presses are constantly at work squeezing this nutritious material into compact cakes, which can be packed in a comparatively small compass, and transmitted to the hungry pigs of remote parts. I am curious to know the nature of the laborious task which is being performed by a dozen muscular men, and am not a little surprised when I hear that they are merely "blueing the starch." These men stand round a large tank, and mix the thick starch with the colouring matter by means of large wooden shovels. To look at them from a distance, one might imagine that they were operating upon iron instead of starch, for no blacksmiths ever worked harder. The colouring matter is *smalt,* and it is added in small quantities to the starch paste, until the latter acquires the delicate blue tint which most laundresses admire. Some of the starch prepared at this factory is left uncoloured, for in certain parts of England the pure white product is alone used.

The starch-paste, whether blued or not, is passed through sieves to free it from any accidental grit, and then poured into cloth-lined troughs, like mignonette boxes, to drain and consolidate. When sufficiently hard, the starch is cut into cubical blocks, each about five inches in diameter, and removed from the troughs. Following the blocks we come to a large room around which are arranged a number of hot closets or stoves. The first and largest of these closets is called the "crusting stove," and into this the cubes of starch are carried and placed in regular rows upon the shelves. After having been exposed for some time in this Turkish bath to a temperature of 140° Fahr., the blocks are removed and the surface crust is carefully scraped off each. The clean blocks are now packed in paper, tied up, and labelled as though they were just about to be sent from the factory.

This operation surprises me, for an important link seems missing in the manufacture. The parcels are familiar enough, but I never remember meeting with a solid cube of starch in commerce. Starch has always been presented to my observation in curious irregular prisms, and I naturally want to see how these prisms are produced. My practical friend laughs when I communicate my wish to him, and informs me that the starch is "crystallized" after it is packed, merely by exposing the parcels to an elevated temperature for several days. Opening one door after another, he shows me thousands of parcels undergoing the process of stoving; and by breaking open at least a dozen parcels, he thoroughly elucidates the mystery of starch crystallization. Taking a packet which has been sufficiently stoved, he unpacks it very slowly and gingerly, so as not to destroy the cubical form of the mass of starch within. The mass which he thus exposes to my view is covered with minute cracks, yet it is a perfect cube for all that. I lightly touch it with my finger and it instantly falls to pieces; where the cube stood I now see a heap of the irregular prisms, or "crystals," as they are commonly, but erroneously termed. These prisms are the parts of a dissected puzzle; but I should as soon think of attempting to count the hairs of my head as trying to rebuild the cube.

I have now traced the progress of the starch from the bag of rice to the packet of crystals, but much remains to be seen before I can tear myself away from the Carrow Works. The vast warehouse into which I am now conducted, enables me to form an adequate conception of the productiveness of the starch factory. The packets are arranged in large blocks, between which wide passages are left. In one of the blocks, which has lately been built, I am assured there are 3,082 packets, and this is not by any means the largest in the place. I cannot help comparing the piles of starch to houses; and the whole warehouse will live in my memory as "Starch Town," or the "City of Fecula."

Messrs. Colman manufacture the products known as "blues," which are associated with starch in domestic economy; but at present the seat of this manufacture is Stoke, where they have another establishment. I am informed that there is nothing very curious in the preparation of the blue, which is a simple mixture of indigo and starch.

Though I have visited Carrow solely to survey the mustard and starch factories, I am tempted to take a peep at the great flour mill which has been erected by the firm, and which for magnitude and completeness surpasses every mill which I have hitherto seen. The machinery in this part of the works is driven by a magnificent pair of engines, which together have a nominal power of eighty horse. There are many other interesting steam-engines connected with the works; indeed, a whole day might be well employed by one with a mechanical turn in merely examining the different sources of power. A fine pair of beam engines, with the nominal power of fifty horse, work the shafting or starch factory; another pair gives motion to the pestles and sieves of the mustard factory; and a very odd-looking oscillating engine is connected with the machinery of the principal workshops.

In a detached building near the offices I am shown another kind of engine, which the

Messrs. Colman will endeavour to keep from working as long as possible, though a staff of well-paid servants are attached to it; this I need scarcely say is a fire-engine. Around the room in which it is kept are arranged the lengths of hose which might be required, with torches, buckets, and a complete set of fireproof dresses. The measures which have been taken to oppose the destroying element are admirable. Water-pipes ramify in all directions through the establishment, and are furnished with cocks of the most improved construction.

An immense quantity of good water is used in the starch manufacture, and to increase the supply the enterprising proprietors of the works are now sinking an Artesian well. Already the astonishing depth of 1200 feet has been reached by the boring tools, and the engineers confidently expect to come upon the green sand and soft water before long.

There is a paper-mill which also claims my attention; but I dare not stop to examine the beautiful machinery which belongs to it, for time flies, and I must reach Bow-lane to-night. In my hurried walk over the works, I come upon coopers' and engineers' shops, a smithy, a steam saw-mill, and many other important adjuncts to the triple Factory for Mustard, Starch, and Flour. I am not astonished, therefore, when Mr. Colman informs me, just as I am leaving him, that no less than six hundred people find constant employment on these great works at Carrow. J. C. B.

THE NATURAL ORDERS OF PLANTS.

SOLANACEÆ—THE SOLANUM, POTATO, OR NIGHTSHADE ORDER.

Several of the most active genera in this order have been grouped together by Miers, and arranged under a separate order, which he terms *Atropaceæ*. The chief points of distinction are in their æstivation, in the lobes of their corollas being often somewhat unequal, one or two of their stamens being frequently sterile, and their anthers either introrse or extrorse (that is, the point where the anther opens to shed the pollen, is turned inwards towards the pistil or female organ, or outwards from it), and always dehiscing longitudinally. As they, however, agree with the other members of the order in all their general characteristics, we shall consider them under one head. The following are some of the principal genera thus classified :—Atropa, Brunsfelsia, Datura, Hyoscyamus, Lycium Nicotiana, Petunia, Salpiglossis, Schizanthus, Solandria, &c. The Solanaceæ include altogether about eighty genera, and one thousand and fifty species. They are natives of most parts of the globe, except the Polar circles, and are very abundant in the tropics—the genera Physalis and Solanum, especially the latter, particularly abounding in Tropical America. The order belongs to the class Exogens, sub-class Corollifloræ; and consists of herbaceous plants and shrubs, some of which rank among the most poisonous members of the vegetable kingdom.

Botanical Characters.—The leaves are alternate, undivided, or lobed, sometimes collateral (standing side by side); the floral ones sometimes double, and placed near each other. The inflorescence (the manner in which the flowers are arranged on the axis) is variable, often out of the axil; the pedicels (the little stalk that connects the flower with the peduncle, or general flower stalk) without bracts (leafy appendages). The calyx (outer floral covering) five parted, seldom four parted, persistent (does not fall off), and inferior. The corolla (inner floral covering) is monopetalous (the petals more or less united together), hypogynous (inserted below the ovary or lower part of the female organ, and free from it, and the calyx); the limb (the flat expanded part of a petal) five cleft, seldom four cleft, regular, or somewhat unequal, deciduous (falls off); the æstivation (the manner in which the petals and sepals are folded in the flower bud before expansion) plaited (folded lengthwise, like the plaits of a closed fan), imbricated (overlapping one another, like the tiles of a house), or valvate (united by their margins only). Stamens (male organs) inserted upon the corolla, corresponding in number to the segments of its limb, with which they alternate; the fifth stamen very rarely sterile. The anthers (the cellular cases on the apex of the stamen containing the pollen) bursting longitudinally, rarely by pores at the apex. The ovary (that part of the female organ which contains the rudimentary seeds) is two celled, composed of a pair of carpels (rolled up leaves of which the pistil is composed) right and left of the axis, rarely four, five, or many celled, with polyspermous (many seeded) placentæ (that part to which the rudimentary seeds or ovules are attached). Style (that part of the female organ which connects the stigma with the ovary) continuous (not jointed). Stigma (that part of the female organ that receives the pollen) clavate (like a club, increasing from the base to the summit) or two lobed. The fruit is either capsular or baccate (berry shaped), and two, three, or more celled. Seeds numerous. The embryo straight or curved, in a more or less annulated or spiral form, often out of the centre, and lying in fleshy albumen.

DISTINCTION FROM OTHER ORDERS.

It may be distinguished from *Scrophulariaceæ* (The Figwort Order) by its plaited corolla, and the presence of five stamens. From *Convolvulaceæ* (The Bindweed Order) by its fruit, having two carpels with axile placentæ, and numerous seeds.

The distinction between Solanaceæ and *Atropaceæ* is chiefly as regards the æstivation, the latter being more or less imbricated, instead of valvate.

The order is subdivided into the two following sub-orders:—

Sub-order 1. *Rectembryeæ.*—Embryo short and straight. Ex. Cestrum Fabinia. Metternichia.

Sub-order 2. *Curvembryeæ.*—Embryo slender, terete, and curved in a more or less annular or spiral form. Exs. Capsicum Lycopersicon, Physalis, Solanum.

General Properties.—Many plants of the order possess narcotic properties to such an extent, owing to the presence of various alkaloids, as to become dangerous poisons; this is especially the case with those genera now grouped together under the order Atropaceæ. Some are pungent and stimulant, as Capsicums; others contain a bitter tonic principle, as Solanum pseudoquina; a few have edible fruits, and some of the plants yield us articles of diet, while at the same time other portions of the plant are poisonous, as in the case of the potato.

Principal Plants and Uses. Acocanthera.—One of the most poisonous plants belonging to the order is the species *Venenata*, a native of the Cape of Good Hope. It is a large bush, with fragrant flowers. A decoction of the bark, evaporated to the consistence of jelly, is said to be used by the Hottentots to poison their weapons, and to impregnate the flesh used as baits in the destruction of wild beasts.

Atropa.—An article on the species *Belladonna* will be found in our Botanical Calendar for June.*

Capsicum.—The species *Annuum* of Linnæus (fastigiatum of Blume) is officinal, and its fruits are sold in the shops under the name of Chillies. Of these there are two kinds; one, two, or three inches in length, the other not exceeding one inch. From the resemblance of the fruit of the latter to the spur of a cock, it is termed Cockspur pepper.

The fruit of the species *Cerasiforme* is the round Chilli, or Cherry pepper. It possesses greater acridity than that of the species *Annuum.* That of the species *Frutescens*, termed Guinea pepper, Guinea pods, India berries, &c., has an aromatic odour, and is extremly pungent; it constitutes the chief source of Cayenne pepper. The species *Grossum* is that known as Bell pepper. The fruit is employed for pickling. The species *Toxicarium* is stated to possess narcotic properties, but this statement has not been satisfactorily confirmed.

Cestrum.—The species *Auriculatum Hediunda, Laurifolium,* and *Pseudoquina*, possess bitter and febrifugal properties, resembling those of Solanum pseudoquina.

The species *Bracteatum, Corymbosum, Euanthes, Lævigatum,* and *Parqui*, are said to possess a diuretic action, and are stated to be emollient, and to be applied, in the fresh state, in cleansing wounds and ulcers. The bruised leaves, and unripe fruits are reported to be much employed by the Brazilians in affections of the liver and catarrhus vesicæ. The species *Macrophyllum* and *Nocturnum* are said to be poisonous.

---

* Vol. i., p. 213.

Datura.—The species *Metel* and *Tatula* possess similar properties to D. Stramonium. The properties of the species *Tatula* are, however, stated to be much more energetic, and it has recently acquired notoriety as a remedy for asthma. The species *Metel* is said to be employed as an opiate by Orientals. The seeds are the most powerful part of these plants. The Peruvians are stated to prepare an intoxicating beverage from the seeds of the species *Sanguinea.* An article on the species *Stramonium* will be found in our Botanical Calendar for August.*

Himeranthus.—The species *Runcinatus* is employed among the South Americans, for similar purposes as the mandrake in other countries.

Hyoscyamus.—An article on the species *Niger* will be found in our Botanical Calendar for June ;† the other species possess similar properties. The stalks of the species *Albus* are said to be used as a remedy against toothache in some parts of the Greek continent.

Lycopersicon.—The fruit of the species *Esculentum,* commonly called Tomatoes, or Love apples, is extensively employed in the manufacture of sauces.

Mandragona.—The species *Officinalis* is the true Mandrake, considered to be the Dudaim of Scripture, and termed Tufah al Sheitan, or Devil's apple, by the Arabs. It has had an exaggerated reputation as an aphrodisiac. It is an acro-narcotic poison, and was used by the ancients as an anæsthetic.

Nicandra.—The species *Physaloides* is said to possess bitter and febrifugal properties.

Nicotiana.—An article will be found on the principal species of this genus in our Botanical Calendar for July.‡

Physalis.—An article on the species *Alkekengi* will be found in our Botanical Calendar for August.§ The species *Angulata, Pubescens,* and *Viscosa,* are said to be diuretic. The species *Peruviana* yields an edible fruit, which is called the Peruvian Winter Cherry. The species *Somniferum* is stated to be narcotic, diuretic, and alexipharmic. The leaves, steeped in oil, are said to be employed in India as an application to inflammatory tumours, and to be used by the Egyptians in a similar manner.

Puneeria.—The dried fruit of the species *Coagulans* is employed in India as a carminative and stomachic, and also as a substitute for rennet in making cheese, &c.

Solanum.—A decoction of the flowers and leaves of the species *Cernuum* is stated to be a powerful sudorific, and to be very useful in cases of syphilis, inveterate gonorrhœa, and similar complaints. An article on the species *Dulcamara* will be found in our Botanical Calendar for November.||

The species *Guineense, Mammosum,* and *Paniculatum,* are said to possess diuretic properties. The fruit of the species *Laciniatum,* termed Kangaroo apples, is said to be a common article of food among the Tasmanians ; but according to Mr. Backhouse, although wholesome when ripe, in the unripe state they are acrid, and produce a burning sensation in the throat.

The species *Marginatum* is said to possess astringent properties, and is employed in Abyssinia in the process of tanning. The fruit of the species *Melongena* and *Ovigerum* are termed Egg apples. They are said to be eatable, after the viscid juice contained in them has been removed. The berries of the species *Muricotum* and *Nemorense* are commonly eaten in Peru. The species *Nigrum,* Black nightshade, a common indigenous plant, possesses alterative and narcotic properties ; its fruit is stated to be edible, but its use, to say the least, requires great caution, as the alkaloid solanina has been found in it. In Brazil it is termed Carachichu, or Erva Moira ; and, when bruised, is applied in poultices or baths to painful wounds. The Quina of Brazil, a very powerful bitter and febrifuge, is the produce of the species *Pseudoquina.* Vauquelin found it to contain a bitter resinoid matter, and other principles, in minute quantities. The fruits of the species *Quitoense* are termed Quito oranges (Narangitas de Quito). The species *Tuberosum* is the Common potato, the tubers of which are so well known and appreciated in this country as an article of food. All parts of the plant contain the alkaloid solanina, but a minute quantity only is found in the tubers, and is removed by boiling. An extract of the leaves is a powerful narcotic, and, according to Mr. Dyer, has been found

---

* Vol. i., p. 273.

† Vol. i., p. 215.

‡ Vol. i., p. 246.

§ Vol. i., p. 273.

|| Vol. i., p. 359.

particularly serviceable in chronic rheumatism and painful affections of the stomach and uterus. Large quantities of starch are also obtained from the tubers, and sold under the names of English arrowroot, Bright's nutritious farina, &c. It is also used in the preparation of dextrine or starch gum, which is used in the arts, &c., as a substitute for gum, size, and paste. When in a state of putrefaction, it is stated to emit a light sufficiently luminous to read by.

SANGUINARIA CANADENSIS.

SYNONYMS.—Bloodroot, Bloodwort, Redroot, Puccoon,* Indian paint, Indian turmeric, &c.

BOTANY.—This beautiful and delicate plant grows abundantly throughout the United States, where it is one of the earliest flowering plants, and a great favourite. It is a perennial, belonging to the natural order *Papaveraceæ*—the Poppy order, and is met with in rich light soil, on shaded banks, or at the edge of woods. The roots are tuberous and horizontal, from two to four inches in length, and from a quarter of an inch to one inch in thickness; of a fleshy consistence, and possessing a bitter, acrid taste, and slightly narcotic odour. They abound in a very acrid, orange-red juice, to which the plant is obviously indebted for its generic name. For medicinal purposes they should be collected in the autumn, when the leaves have decayed, as they then contain a larger amount of the active principle than they do at any other season. The powder of the dried root is of a bright orange-red colour. The plant grows to the height of six or eight inches, and is terminated by a single flower. The leaves are solitary, radical, kidney-shaped, and lobed. The flowers, which appear during the month of April, are white, and very handsome; but devoid of odour, and very readily fall off. Every part of the plant possesses active medicinal properties, but the root alone is officinal. The Indians are said to employ the juice of the latter as a paint.

CHEMISTRY.—Dr. Dana succeeded in extracting an alkaloid from this plant, to which he gave the name of *Sanguinarina*. It is a pearly white substance, having an acrid taste, and possesses the properties of the root in a highly concentrated degree. It is soluble in ether, and very soluble in alcohol; and unites with the acids, forming beautiful salts, remarkable for their colour, being either red, crimson, or scarlet, of more or less intensity. The orange-red colour of the juice of this plant is, in all probability, due to the natural salt of the alkaloid. A resinoid substance, termed *Sanguinarin*, has also been obtained from this plant; it is much less active than the alkaloid, but is extensively employed in what are termed "concentrated preparations." It acts as a tonic, hepatic, and alterative.

MEDICINAL PROPERTIES.—In small doses, according to Dr. Lee, bloodroot "excites all the secretions, particularly those of the bronchial and gastro-intestinal mucous membranes; also the liver, kidneys, and skin. In larger doses it acts as a narcotico-sedative, abating the force and frequency of the pulse, causing nausea, vomiting, purging, faintness, vertigo, diminished vision, coldness of the surface, great reduction of muscular strength, convulsive rigidity of the limbs, &c. In poisonous doses speedy vomiting ensues, attended with a burning pain in the epigastric region, violent retchings, intense thirst, intermittent and feeble pulse, cold clammy perspiration, delirium, extreme prostration, convulsions, stupor, and death."

It is said to be stimulant, diaphoretic, emetic, alterative, expectorant, narcotico-sedative or narcotico-acrid, according to the manner in which it is used. One of its most important applications has been in pulmonary affections, and it has been found of service in typhoid pneumonia, catarrh, bronchitis, pertussis, and asthma. It has also proved useful in some liver complaints, as jaundice, and has been employed in scarlatina, rheumatism, dyspepsia, croup, amenorrhœa, &c.

---

* This must not be confounded with Hydrastis Canadensis, Yellow puccoon; which is a Ranunculaceous plant.

The late Professor Francis employed it most successfully in pulmonary affections, especially those of a chronic, catarrhal, and bronchial nature. Professor Ives speaks very favourably of its curative powers in chronic affections of the lungs and liver; and also recommends it as highly useful in influenza, whooping-cough, and croup. Dr. Tully used it beneficially in torpor of the liver, attended with diminished secretion of bile, and also as an emmenagogue and diaphoretic. Dr. Jennings found the acetous decoction useful as a gargle in malignant scarlatina, whilst others state that they have found it efficient in the form of gargle in malignant diphtheria, as an application in the form of ointment in certain skin diseases, and as a local application to ulcers. Dr. Lee, however, states, that for the latter purpose, and as sternutatory, it has become obsolete.

PREPARATIONS AND DOSES.

The preparations in use comprise the powder, compound powder, powder with camphor, infusion, decoction, preserved juice, extract, tincture, wine, vinegar, syrup, and ointment, to the principal of which we append the doses.

Fluid extract, gtts. v. to gtts. xv.; and gtts. xl. to gtts. lx. Solid extract, gr. ss. to gr. iss.; and grs. iiss. to grs. v. Sanguinarina (alkaloid), gr. $_{1}$ to $\frac{1}{10}$. Sanguinarin (resinoid), gr. $\frac{1}{4}$ to gr. j.; and gr. ss. to grs. ij. Pills made of the powdered root, gr. ss. to gr. j.; tincture, ʒss. to ʒj.; as an emetic, ʒiv. to ℥j.; syrup, ʒj. to ʒij.

SCIENTIFIC INTELLIGENCE.

The Economic Application of Sea Plants.—A very interesting and valuable paper on the above subject was lately read before the Society of Arts, by Mr. E. C. C. Stanford, F.C.S. The lecturer commenced by giving an account of the uses to which sea-plants are at present applied, and described minutely the methods adopted for its conversion into manure, food, and kelp. Now that soda is no longer procured from the latter substance, its principal value is as a source of iodine—a value which daily increases, owing to the enormous quantities of soluble iodides consumed by photographers. The manufacture of iodine is carried on at present in a most unphilosophical and wasteful manner, at least one-half of this valuable material being lost during the process. The sea-plants are first dried, and then burnt in large heaps in the open air; the resulting kelp is lixiviated and the solution evaporated; the sulphate of potash deposits first in small crystals, and then the chloride of sodium; these are separately collected, and the solution is run off into iron coolers, where a crop of crystals of chloride of potassium is deposited in three or four days. This process is repeated with the mother liquor, and the second crop of chloride of potassium crystallises out; the mother liquor remaining is very dark, and contains sulphides; oil of vitriol is added to decompose these, and much sulphur is precipitated; this is one of the bye-products of the factory. The liquor, after the addition of the oil of vitriol, is decanted from the deposited sulphur, and distilled with binoxide of manganese in leaden retorts; the iodine sublimes, and is received in earthen vessels.

The disadvantages of this process are many. 1st, A large amount of iodine is lost by volatilization during burning; 2nd, The alkaline sulphates are converted into sulphites by the excessive heat employed for combustion, necessitating the use of a large amount of sulphuric; 3rd, The crude manner in which the plants are burnt causes the addition of stones and sand to the kelp; 4th, The heat produced is wasted entirely; 5th, The loss resulting from the neglect of the winter supply, from the impossibility of drying the plants collected, and the spoiling of large quantities by rain; 6th, The dense smoke and unpleasant smell banishes the kelp-burner to desolate shores, the cost of transit of the kelp to the lixiviating factory being materially increased. Mr. Stanford proposes to remedy these evils in the simplest possible manner. He stores the plants in sheds, dries them under cover, and presses them into cakes. He then subjects the pressed masses to destructive distillation, by which means he obtains gas for lighting purposes, tar and tar products, various aqueous products, and charcoal. The charcoal is lixiviated, and when dried may be used as fuel. It will be seen that Mr. Stanford's process offers the following advantages:—

1. Retention of the whole of the iodine.
2. Easy and rapid lixiviation, colourless solutions, and pure salts.
3. Absence of sulphur compounds in the mother liquor, great saving of oil of vitriol, and no evolution of poisonous gases.
4. Factory to a great extent self-supporting, having its own means of heat and light, the fuel being extracted from the plants themselves.
5. Manufacture continuous, affording employment to the kelpers all the year round.
6. Extension of the manufacture, as this process allows a much larger margin for profit, and admits of the lucrative working of the commonest material.

The lecturer concluded by protesting against the opprobrious name of "weed," as applied to these useful and beautiful inhabitants of the ocean—a protest in which we heartily and *practically* join.

Mr. Stanford has of course patented his process, and we believe that the manufacture of iodine, by a method at once philosophically correct and commercially profitable, has already commenced. Mr. Stanford has been granted space in the International Exhibition for the display of the varied products obtainable by his process, and we shall return to this subject in our articles on the Exhibition, when we come to consider Mr. Stanford's specimens.

Cause of the Motion of Camphor on Water.—Mr. Charles Tomlinson, whos interesting researches on "Cohesion Figures" were noticed in our last number, recently made a communication to the Royal Society, detailing his investigations into the cause of the singular movements of small pieces of camphor when floated upon water. This phenomenon has long been known, but has never before received a satisfactory explanation. Mr. Tomlinson finds that the movements only occur when the camphor is placed upon perfectly clean water, contained in a clean vessel, and that they may be imitated by smearing any small floating objects with a volatile liquid, such as ether, chloroform, &c., and the floating it upon water; when the camphor or other volatile substance, being slightly soluble, spreads in a film over the surface of the water. These films are, however, not given off uniformly, but separate more quickly from the sharp angles and broken surfaces than from the smoother parts of the camphor, &c., and passing off in straight lines, re-act upon the fragments of camphor, causing them to rotate in the opposite direction to that in which the film is passing off. Mr. Tomlinson has devised an ingenious method of rendering these films visible, by fixing the pieces of camphor, and then dusting the surface of the water with lycopodium powder, when the currents produced by the passing off of the films are rendered distinctly visible. The irregularity of the movements depends greatly on the influence exerted by the different pieces of camphor on each other, and also on the attraction of the sides of the vessel. It may be noticed that a piece of camphor, when placed in water, wastes much more quickly at the surface of the fluid than above where it is exposed to the air, or below where it is acted on solely by the water; this is owing to the film which is constantly being formed, and which evaporates into the air as rapidly as it is spread out on the surface of the water. Whatever interferes with rapid evaporation tends to arrest the singular phenomenon; therefore the movements are not nearly so lively on a dull, foggy day, as on a bright, shining one, when evaporation goes on with great rapidity. Any fixed oil, or the slightest greasiness of the water, or of the containing vessel, will, by producing a fixed film on the surface, prevent the formation of the camphor film, and so interfere with the occurrence of the interesting movements.

New Applications of the Mineral Oils.—Our fellow-worker in trade literature, the *Ironmonger*, justly claims the credit of having been amongst the earliest advocates of the profitable employment of the mineral oils, and refers to numerous articles which have appeared in its pages, noting the exact qualities of the different samples of oil in the market. Long before the analytical commission of the *Lancet* commenced examining these oils, the expert of the *Ironmonger* was busily engaged in determining their relative inflammability, specific gravity, odour, and colour; so that the truths proclaimed with such a flourish of trumpets by our medical contemporary are not by any means novel. Last month the *Ironmonger* pointed out several new applications of the native oils of North America, which promise to be most important. The following extract from the article will be read with as much interest by pharmacists as by the tradesmen for whose edification it was written:—

> The mineral oils obtained in the States differ from those procured by the destructive distillation of coal or the Boghead shale. Unlike the coal-tar products, they do not contain any benzole, and hence are not capable of being used as a source of the new dyes, *aniline*, *magenta*, &c., &c. They appear to belong to a different series of hyoro-carbons—related to the Eupion group. The more volatile liquids contained in these oils are like the benzole of the Paraffin series, so inflammable that they render the oils dangerous for use in lamps; and, as there has been hitherto no useful or profitable application of these lighter portions made, there has always been a temptation to allow them to remain in the oils, rendering them too easily inflamed to be perfectly safe. Hence the great problem is to devise some useful application of these lighter products. This important problem is in a fair way of being solved, as several practical applications have been suggested. The most volatile liquids of this group have a specific gravity varying from 6·50 to 7·50; they evaporate readily when exposed to the air, and hence they offer very considerable advantages when used instead of turpentine in the preparation of lead paint. For this purpose they have been successfully employed in America, and are coming into use in this country.
>
> Again, as they possess the power of dissolving resinous substances with great rapidity, they may be used instead of wood spirit, methylated or pure alcohol, for the preparation of many kinds of varnish; and as they also possess a power that these spirits do not, namely, that of dissolving india-rubber and gutta-percha, they afford the means of making certain combinations of elastic gums and resins in the preparation of varnishes which offer many advantages in practice.
>
> We have received from the London Asphaltum Company two samples of the lighter spirits prepared for these purposes. They are sold under the commercial name of Mineral Turps, or turpentine; their present price may be stated to be about one-third less than that of the ordinary turps. Both are perfectly colourless. No. 1, which is the more volatile, possesses a slight naphtha-like odour, totally free from any nauseous character. It is so diffusive, that a large drop allowed to fall upon thin paper spreads out into a width of two inches, and in a room at a temperature of 55° Fahr. evaporates perfectly in twelve minutes, leaving the paper without any perceptible stain. Its vapour rises so rapidly, and is so inflammable, that at the temperature of 65° a small portion on a plate gives out a vapour that can be set on fire one inch above the surface of the liquid. This fluid promises to be a most valuable agent in the preparation of varnishes, as a substitute for spirit; but it must be used with a due regard to the inflammable character of its very diffusive and inflammable vapour.
>
> No. 2 Mineral Turps of the same company is rather heavier; its specific gravity is 7·45; it is perfectly colourless, but its odour is less pleasant than that of No. 1. It is rapidly diffusive, when dropped on paper, and leaves the slightest perceptible stain after evaporation; is less volatile, although its vapour at 65° can be inflamed half an inch above the surface of the liquid. This liquid is manufactured as a substitute for turps, in the ordinary lead paint, for which purpose it appears particularly well adapted. It is obvious that the removal of these more volatile and inflammable portions is a great advantage to the oils intended for illumination; and that, though so easily ignited, they may, with due precaution, be used as safely as turps or spirits for the purposes for which they are respectively adapted.
>
> There is one use of these lighter oils which does not appear to have been suggested, but which is quite worthy of a very extensive trial, namely, their employment as a means of increasing the illuminating power of coal gas. If a stream of gas, of a low illuminating power, is passed through these liquids, it carries off so much of the vapour that its illuminating power is increased in a remarkable degree; hence they may be used in those contrivances termed naphthalizers—in which the gas passes over and through porous strata saturated with the mineral oil. In order that the lighter mineral oils may be extensively employed for these purposes, they must be fairly purified—an object which may be readily accomplished by distilling them with charcoal reagents, which are of low cost, and are effectual in removing the nauseous smell that distinguishes the crude and undistilled samples of many varieties.

Vesicating Collodion.—In an elaborate paper communicated to the Pharmaceutical Society, Mr. Charles R. C. Tichborne proposes the following formula for this preparation:—

Take Cantharides, ℥vj.
Ether from methylated spirits, f℥xiij, or q. s.
Glacial acetic acid, f℥ij.
Gun cotton, ʒss.
Methylated spirits of wine, f℥vij, or q.s.

The cantharides, coarsely powdered, are placed loosely in a displacement apparatus, the flow of which can be regulated by a tap; upon the cantharides is poured the ether and acetic acid previously mixed together; after the whole has passed through, it will be found that the *débris* has retained, by absorption, seven fluid ounces which must be displaced by the gradual addition of an equal bulk of methylated spirits. If properly managed, there is not the least danger of the admixture of the spirits with the percolated menstruum, as the animal substance of the flies swells considerably under the prolonged influence of the spirits of wine, so that the same bulk will be insufficient to quite displace the ether. The ethereal solution should be made to measure exactly f℥xv. with a little spirit, and may then be converted into a collodion by the addition of the gun-cotton. The glacial acid plays a double part in this preparation. It dissolves the cantharadin, and at the same time gives to the collodion film the essential property of porosity. Ordinary collodion is useless as an excipient, for it produces a tough and contractile film which really screens the skin from the action of the greater part of the blistering material. The most effectual method of using the *collodium vesicans* is as follows:—The part upon which the blister is to be raised should be painted with the vesicant to the desired extent, bearing in mind that the blister produced always extends to about one-tenth of an inch beyond the margin of the space covered. Care should be taken to give a coating of considerable thickness, and to insure this result the brush should be passed over and over again until about ʒss has been used to the square inch, or less when operating upon a tender epidermis. It is desirable to place over the intended blister a piece of oil silk, or what is still better, a piece of sheet gutta percha, somewhat larger than the surface painted, as this will stop the exhalations of the skin and so render it moist and permeable. In ten minutes, or a quarter of an hour if the cuticle is hard, the collodion should be wiped off with a little cotton-wool moistened with ether, when the blister will almost instantly rise.

Chloric Ether.—In thirteen specimens of the so-called Chloric Ether (a solution of chloroform in spirits of wine), procured from different respectable chemists' shops, Mr. A. N. Tate found the proportions of chloroform to vary from 10.4 to 19.8 parts by weight per cent. It is greatly to be desired that some definite formula should be given for the preparation of this useful and much employed medicine, for it is utterly impossible for medical men to rely upon the effects of their prescriptions, when so great a difference exists in the composition of the medicines they order.*

Substitute for Laurel-water.—Dr. Pile, of Philadelphia, has lately introduced a very delicate volumetric method for ascertaining the per-centage of prussic acid in distilled waters, oil of bitter almonds, &c.† In examining by this method various samples of *Aqua Lauro-Cerasi* he found that some contained scarcely a trace of prussic acid and were therefore worthless as medicines; while the proportion in the others varied from the minutest quantity up to the full average, which is about one-tenth of one per cent. In view of this great uncertainty, he calls attention to a substitute for the distilled cherry laurel-water, which he proposed several years, and which contains the proper proportion of prussic acid.

Take Medicinal Prussic Acid	f ʒ j.
Oil of Bitter Almonds	♏ ij.
Dissolved in	
Alcohol	ʒ ij.
Distilled water, q.s.	ft. fl. ℥ iij.

Manufacture of Quinine.—The following process for obtaining quinine has been proposed by M. Clark.‡ The cinchona bark is boiled with water containing muriatic or sulphuric acid; the decoction is treated with an alkaline carbonate as long as a precipitate forms, then a small quantity of stearic acid is added, and the whole boiled. The fat acid fuses and floats on the surface; little by little the quina and cinchonia unite with it, forming an insoluble soap, whilst the precipitate blackens. When cool, the stearate solidifies and is removed and boiled in pure water, as long as the water is clouded, after which the stearate is treated with boiling acidulated water, which removes the alkaloids. The hot solution having been neutralized by an alkali, a brown matter is separated by filtration; when, upon cooling, the whole becomes a magma of crystals of sulphate of quina and cinchonia. These are separated by the ordinary process. M. Clark asserts that the fatty soap contains all the quina and cinchonia of the bark treated. He recommends a similar process for opium.

---

* *Pharm. Journal.*

† See *Amer. Journ. Pharm.* for March.

‡ *Journ. de Pharm.*

REVIEWS

A Manual of Materia Medica and Therapeutics: including the Preparations of the Pharmacopœias of London, Edinburgh, and Dublin, with other approved Medicines. By J. FORBES ROYLE, M.D., F.R.S. Third Edition, revised and enlarged. By FREDERICK W. HEADLAND, M.D., B.A., F.L.S. London: John Churchill. 12s. 6d.

THOUGH the greater number of our readers must be familiar with the above title, we have reason to know that there are many studious assistants who take immense trouble to obtain even a dim reflection of the light which Dr. Royle's admirable work sheds upon medicines and their effects. Every post brings us letters asking for information which might be readily got by referring to the pages of the Manual. We are asked for synonyms, formulæ, and tests; for explanations of the action of different drugs; for descriptions of medicinal plants; and, indeed, for answers to all kinds of questions relating to those united branches of knowledge, Materia Medica and Therapeutics. Many queries go at once into the waste-paper basket, for our space is so limited that we are compelled to make a selection. This statement will suffice to account for the appearance in our pages of a notice of a work which has passed through three editions, and has been often reviewed before. It is not our intention to criticise Dr. Royle's production, but merely to show its aim and scope, by giving a synopsis of the contents.

The term *Materia Medica* is applied to the science which treats of the substances employed as medicines, describing their natural characters, sensible properties, and chemical qualities. *Therapeutics*, in the most comprehensive sense, includes the application of remedies for the prevention and cure of disease. As connected with Materia Medica, it relates to the modes of action and effects of remedies. Some knowledge of these two branches of professional study is absolutely necessary to the pharmacist; and looking solely to practical results, we say the deeper the knowledge the better. The subjects treated in the work before us are arranged thus:—

The Introduction (20 pages) includes a consideration of the objects and methods of the twin sciences; a succinct account of the chief operations of Pharmacy, and a general view of Pharmaceutical Chemistry.

The next division (224 pages) comprises the Materia Medica of the Inorganic kingdom. The various substances, simple and compound, are fully described with regard to their history, their chemical and physical properties, and their medicinal action. The preparations of the three British Pharmacopœias are contrasted; the chemical tests for all the more important bodies are described; and the uses and doses of the medicines clearly set forth, the latter being expressed in the ordinary pharmaceutical symbols.

The Organic kingdom forms the subject of the second great division (500 pages). First, we have a description of the different parts of plants which are used officinally, and which we require to know for the sake of understanding botanical classifications. Following this interesting chapter, there are observations upon the classification, physiology, and geography of plants; the medical properties of natural orders, and on the collection and drying of vegetables. Then come some long analytical tables of the characters of classes and orders, which are followed by elaborate descriptions of all the medicinal plants, with their preparations, actions, uses, and doses. The products of fermentation, &c., are next considered, and then after a notice of the fossil products petroleum and amber, the animal Materia Medica, from porifera to mammalia.

The next section (45 pages) describes the physiological and therapeutical arrangement of the Materia Medica, and the work concludes with several useful tables. In every part of the Manual we detect a rigid economy of words, yet so much knowledge falls within the scope of its title, that the pages number upwards of 800. We must not omit to notice the synonyms given for the various medicines. Besides the different Latin and English names, we find, in most cases, the French and German. The work is illustrated with eighty-four excellent wood-cuts, most of them accurate portraits of the officinal plants.

NEW BOOKS.

Hickie's Arithmetic; its Principles and Application. 12mo. 3s. cloth.
Miers' Contributions to Botany. Vol. I. 36s.
Muir's Handbook to the Stamp Duties. Crown 8vo. 5s. cloth.
Pease's Course of Practical Geometry. Fifth Edition. 12mo. 2s. 6d. cloth.
Sidney's Electricity: Its Phenomena, Laws, &c. New edition. Fcap. 8vo. 2s.
Slugg's Stars and the Telescope. Second Edition. 12mo. 1s. 6d.
Tegetmeier's Manual of Domestic Economy. Sixth Edition. Fcap. 8vo. 1s. 6d.
Thompson's School Chemistry. Second Edition. Fcap. 8vo. 6s. 6d. cloth.

PUBLICATIONS RECEIVED.

Pharmaceutical Journal.—Grocer.—Geologist.—Practical Mechanic's Journal.—Scientific American.—American Journal of Pharmacy.—American Journal of Science and Arts.—American Medical Times.—Tilden's Journal of Materia Medica.

[NOTE.—We are again reluctantly compelled to defer the publication of our promised review of Dr. Odling's work, for want of space.]

THE MONTH

Legal Intelligence.—*The Sale of Methylated Spirits.*—On the 5th ult., at the Birmingham Public Office, several respectable druggists were summoned at the instance of the Inland Revenue Department, charged with selling methylated spirits without licence, by which they were liable to a penalty of £50, and with selling methylated spirits mixed with peppermint, to be used as a beverage, by which they were liable to a penalty of £100. The first case gone into was that of Mr. William Bowler, who was charged on three counts; first, with selling methylated spirits without a licence; second, with selling methylated spirits mixed with peppermint; and third, with mixing peppermint with methylated spirits, so as to form a beverage. Mr. Bowler said it was all one transaction, and he did not at the time he sold the article know he had been doing wrong, as he had bought it as "finish." He pleaded guilty to the first count. Mr. Dwelly said he appeared for the Commissioners of Inland Revenue, and it would be hardly necessary for him to go into the circumstances of the case at any length, as they had recently had them all before them. By the Act 24 and 25 Victoria, cap. 91, a penalty of £50 was imposed on any person who sold methylated spirits without a licence, for which he must give £2 2s. Under section 6 of the same Act, it was made an offence to mix with methylated spirits any article, by which it might be made fit for a beverage. In this case it appeared that Mr. Bowler had sold a pint of the methylated spirit, and another pint of methylated spirit mixed with peppermint. The object of the prosecution was not to obtain any very heavy penalty, but to put a stop to a practice that had caused a serious loss to the revenue. He therefore asked for judgment on the first count, to which the smallest penalty was attached, and the £50 could be reduced by the magistrates to one-fourth. A fine of £12 10s. was accordingly inflicted. The other defendants were Messrs. S. and H. P. Allport, Mr. Coulson, Mr. T. Kemp, and Mr. T. Gilman, who were each fined on one count £12 10s., the mitigated penalty.

Poisonings.—*By Laudanum.*—At the York Assizes Richard Buckle, formerly a police officer, was charged with feloniously administering one ounce of laudanum to Jane Buckle, his wife, with intent to murder her, at Middlesbro', on the 26th of June last. She had been complaining of pain, and he gave her a dark brown liquid, which he directed her to take previous to retiring to bed, and to say nothing about it to her sister, who was then in the house. This request on the part of the prisoner aroused the suspicion of his wife, and she took half of the liquid only, and not the whole, as her husband desired. At an early hour on the following morning, she became dangerously ill, vomited seven or eight times, and had to keep her bed for the whole of the day. She, however, recovered, and no notice was taken of the matter. In about a fortnight afterwards the prisoner brought home a powder, which he said he had got for her from a person named Hopper. This powder, in the absence of the prisoner, his wife took from his coat-pocket, and substituted in its place a powder similar in appearance, composed of sugar and flour. The powder in the prisoner's pocket was taken to Mr. Dickinson, chemist, who discovered that it contained a considerable quantity of strychnia. When the powder was found to be poisonous, the prisoner's wife, who was in fear of her life, left her home with her child, and informed the police of what had occurred. The prisoner was apprehended and tried at the last Yorkshire winter goal delivery, on the charge of attempting to administer strychnia to his wife, but the evidence failed to bring home the charge, and the prisoner was acquitted; the present charge, therefore, of administering the laudanum was preferred against him. It was shown that the prisoner possessed himself of the laudanum under the pretence that his wife was afflicted with toothache, and that he administered it to her. Verdict, Guilty. Sentence of death was recorded against the prisoner, his Lordship intimating that the punishment would be commuted to penal servitude for life.

A young woman, named Mary Moore, residing at Trowbridge, having quarrelled with her lover, resolved to put an end to her existence. With this view she purchased small quantities of laudanum at the shops of different chemists, to the extent of more than nine drachms, which she drank soon after. Returning home to her sister's at night, she was taken ill, and, despite of medical aid, died early on Sunday morning. All the witnesses who saw the deceased just before she was taken ill concurred in saying that she seemed perfectly sane, and there was nothing in her appearance to excite suspicion. The coroner's jury returned a verdict to the effect that deceased came by her death from the effects of laudanum administered by her own hand; but there was no evidence to show what state of mind she was in at the time.

An inquest was lately held by Mr. Payne, at St. Thomas's Hospital, on the body of Jane Strickland, whose death resulted from taking a quantity of laudanum, after a quarrel with her husband. She was conveyed by her son to the hospital, where the porter told him to walk round and he would find a surgeon, and that the surgeons were then at dinner. It appeared that they walked about for a quarter of an hour, and that twenty minutes elapsed before the stomach-pump was applied. The house-surgeon, in answer to a question put to him by the coroner, said he got up immediately he was called to attend to the deceased. The coroner remarked that it was very strange that if he attended immediately she should have been waiting a quarter of an hour. The house-surgeon said he applied the stomach-pump, but it was of no service. The poison, having been taken on an empty stomach, had been absorbed. She died about half an hour after her admission. The jury returned a verdict of "Temporary insanity;" at the same time they expressed their opinion that some one ought always to be present to attend to such cases.

By Plating Liquid.—An inquest was held on the 19th ult., at Bethnal-green, on the body of Elizabeth Christopher, aged 40. The evidence showed that the deceased had cohabited with Alfred Hill, a shoemaker, and that they were frequently in the habit of quarrelling. On returning home on Monday night the deceased went to the cupboard and took out a bottle. She swallowed a portion of the contents, and exclaimed, with a shriek, "Oh God, Alf., I have done it!" She fell heavily to the floor, when he found that the deceased had swallowed a quantity of a poisonous liquid used in plating goods. He ran for a police-constable, and then hastened for a medical gentleman, who attended, but the deceased was pronounced to be dead. She knew what the bottle contained; it was not labelled. Hill, who was examined, stated that she drank off the poison before he could reach her. He said that he purchased the poison at the Golden Key, Norton-folgate. The bottle contained two-pennyworth of nitrate of silver, and three-pennyworth of cyanide of potassium. Mr. B. Shaw, surgeon, deposed that the deceased had taken sufficient to kill about half a-dozen persons. The poisons mentioned were sold indiscriminately all over London by chemists, and no questions were asked. The coroner remarked at some length on the shocking nature of the case, and animadverted in strong terms upon the reckless sale of such poisonous drugs. Verdict, "Temporary insanity."

By Cyanide of Potassium.—Richard Baker, aged 20, a potman at a public-house in Ratcliff-highway, committed suicide a few weeks ago by this terrible poison. His bed-room door was found to be locked by the servant-maid, who went to call him in the morning. She raised an alarm, and the apartment was forcibly entered, when the deceased was discovered lying upon the bed in a composed state, as if in a sound sleep. Upon the table there were two phials labelled "Poison." At the Coroner's inquest Mr. Henry Taynton, surgeon, deposed to being called to the deceased, whom he found lying in bed quite dead. He examined the body, and death was clearly the result of the poison known as cyanide of potassium, which was used by artists in the process of photography. The jury returned a verdict of "Temporary insanity."

By Sugar of Lead.—At the Exeter Assizes a girl aged 14, named Caroline Binmore, was indicted for administering poison to her mother, with intent to murder her, on the 18th of January, at Torquay. It appeared that the girl, dreading punishment for having told a falsehood, put a drachm of sugar of lead in a cup of tea, which she tried to persuade her mother to drink. The poison had been purchased to make a lotion, and was kept in the cupboard. The mother, finding that the tea had a bad taste, did not drink enough of it to hurt her. The jury, having heard the evidence, returned the verdict of "Guilty, with intent to do grievous bodily harm," and the learned Judge then sentenced the prisoner to six weeks' imprisonment, to be followed by five years' residence in a reformatory school.

By Arsenical Paper.—Two children, aged seven and three respectively, have had a narrow escape, in Birmingham. Whilst out together they purchased some sweetmeats called "suck-papers," which are composed chiefly of a quantity of sugar, wrapped in pieces of green paper. They both sucked the papers and their contents, and were soon afterwards seized with symptoms of arsenical poisoning. A surgeon was sent for, but the poison proved its own antidote, for the doses were sufficiently large to produce excessive vomiting. Had the quantity of the poison not been so abundant, death, in all probability, would have ensued in each case. The vendor of the sweetmeats alleges that he bought the deleterious stuff from a wholesale house in the same town.

By Oxalic Acid.—An inquest was lately held at Compton Market, on the body of John Holbrook, labourer, aged 22. It appeared that the mother, who is a straw bonnet maker, and with whom deceased lived, purchased at the shop kept by Mr. John Oliver, a quantity of oxalic acid, which is used in cleaning bonnets, and she incautiously put the acid into a drawer where she kept Epsom salts. The crystals of oxalic acid somewhat resemble those of Epsom salts, and she administered some of the deadly poison, mixed in water, to her son, who had complained of a pain in his head. Mr. Lovell, surgeon, of the same place, was promptly in attendance, but in twenty minutes from the period of the deceased swallowing the draught he was a corpse, and before the arrival of a medical man. The poor mother of the deceased, who was devotedly attached to her son, admitted how incautiously she had acted in putting the poison in the same drawer with the salts, but in her agony before the jury added that if it had been labelled "poison" she should not have killed her child. Mr. Oliver, who at first excused himself by saying there was no law to compel him to label his poisons sold in the way of trade, was censured by the coroner for the loose manner in which he managed his business, it having, he said, come to his knowledge that he had some time since sent out bottles containing tincture of rhubarb and laudanum unlabelled, and that had it not been for Mr. Lovell, the surgeon, who administered an antidote, a farmer would have been poisoned, as he had taken one for the other. The coroner having cautioned Mr. Oliver as to his future proceedings, said he grieved to say the law was very defective. The jury returned the following verdict:—"That the deceased was accidentally poisoned by taking oxalic acid mixed with water, administered by his mother, Matilda Holbrook, in mistake for Epsom salts, and the jury are of opinion that proper caution was not used either by the mother, or Mr. John Oliver, the *shopkeeper*, who ought to have labelled the poison."

By Prussic Acid.—On the 4th inst., Mr. Raffles Walthew, Deputy Coroner for East Middlesex, held an inquest at the Morpeth Castle, Wick-lane, Old Ford, Bow, on the body of John Ford, aged seventy-four, a surgeon, who expired under the following circumstances:—Clarence John Ford, of 23, Francis-terrace, Wick-lane, Old Ford, said the deceased, who was his father, was a surgeon. On the afternoon of the 29th ult., witness was up stairs with the deceased, when he was seized with choking. A lodger in the house first heard deceased making a noise, and told witness and his mother. When they went up stairs he was insensible. He was lying on the bed. His mother sent for Mr. Cooper, who pronounced him dead. He had previously threatened to commit suicide. Elizabeth Ford, the widow of the deceased, gave evidence to the effect that deceased was in pecuniary difficulties. Mr. J. Cooper, surgeon, said, after he had analysed the contents of the stomach, he found sufficient prussic acid to cause death.—The jury found a verdict of "Temporary insanity."

By Bleaching Powder.—On Friday, an elderly woman, named Elizabeth Blankley, residing at Epperstone, near Southwell, Notts, swallowed a quantity of chloride of lime, mistaking it for medicine. She died soon afterwards.

Alleged Death from Quackery.—The following very fair account of an inquiry lately held at Brentford appears in the columns of the *Lancet*:—"The doings of a certain establishment founded by the 'Rev. Dr. Moseley' have been brought this week into useful notoriety by the inquest held on an unfortunate young man, named John Hays, who died at Brentford. This person had suffered for some time past from nervous headache, and placed himself under the care of the reputed firm of Moseley. It came out in the course of the inquiry that the present 'business' is carried on by a qualified surgeon, Mr. John Ogle Else, who attends daily at the establishment known as that of Moseley, 'just to take the consultations, to oblige the reverend gentleman's successor, Dr. Gatehouse.' The patient received a powder to be rubbed into his head, and a lotion to wash off the powder, with some drops to be taken internally. After rubbing in the powder and sousing the head accordingly for some days, he became affected with suppurative phlebitis of the veins of the scalp, and died. The surgeon called in had recognised the nature of the disease during life, and after death the phlebitis of the veins of the scalp and cranium was very evident. The result of the chemical examination of the powder by Mr. J. E. D. Rogers was, that it consisted of common oatmeal and a considerable per-centage of ordinary nitre in unusual-sized grit. His opinion was, that on rubbing the powder in its gritty condition on the surface of the head, the grit of the nitre broke the skin, and produced irritation. The lotion appeared to be a harmless solution of acetate of ammonia and tincture of lytta, a kind of hair-wash. The jury, after a protracted deliberation, returned the following special verdict:—'That the deceased died from the mortal effects of coma, brought on by disease in the frontal vein in his head, and after he had used certain external remedies to his head: and that by what means the said disease was occasioned there was not sufficient evidence to prove. The jurors, further, cannot but pass a most severe censure upon Mr. John Ogle Else, for lending his name and countenance to the use of quack medicines, as supplied to the deceased John Hays, from the establishment, 18, Bloomsbury-street, Bedford-square, and which is at the present time presided over by him, and which was known as that of the Rev. Wm. Willis Moseley, A.M., LL.D.' We commend the conduct of Mr. Else to the unfavourable consideration of the Medical Council."

Miscellaneous Jottings.—A Special General Meeting of the members of the Pharmaceutical Society has been convened, to be held at the house of the Society to-morrow (the 16th inst.) at noon, for the purpose of approving and confirming certain alterations in the code of Bye-laws.

The planting of the Cinchona was commenced last January at Travancore in India.

Dr. Wilde, the eminent oculist of Dublin, has absolutely assigned St. Mark's Ophthalmic Hospital to trustees for the benefit of the poor of Ireland. This institution was founded by Dr. Wilde.

Last week a gentleman was robbed near the Euston-road by two scoundrels, who made use of a glove wetted with chloroform as their weapon of attack.

The *Grocer* of last Saturday gives a capital leader advocating the general adoption of a uniform system of weights and measures, and calling attention to the host of unnecessary duplicate tables now in existence.

Acids of Benzoin.—Hermann Aschoff obtained from Benzoin of Sumatra pure cinnamic acid, without finding benzoic acid; the white tears were entirely soluble in ether, and contained 11·2 per cent. cinnamic acid. A second quality of Sumatra benzoin and several kinds from Siam did not contain a trace of cinnamic acid. He recommends the following ways for detecting cinnamic acid in the balsam; it is either boiled with milk of lime, the filtrate decomposed by muriatic acid and treated with bichromate of potassa and sulphuric acid, or with permanganate of potassa; or the alcoholic tincture is poured into water, the alcohol evaporated, and the filtrate treated in the same way. The presence of cinnamic acid is manifested by the odour of oil of bitter almonds. Benzoin containing cinnamic acid is unfit for preparing benzoic acid for medicinal purposes. Kolbe and Lautemann obtained from Sumatra benzoic a mixture of 2 equiv. benzoic with 1 equiv. cinnamic acid, fusing at 94° C.—*Amer. Journ. Pharm.*

An Analysis of Anachuita Wood is published in Archiv. d. Pharm. cvii. 176-179. By repeated fractional cohobation and agitation with ether, an oily liquid was obtained, possessing the odour of the wood; it was an aldehyde. The decoction was precipitated by acetate and subacetate of lead, which precipitated a tannin resembling that of catechu, gallic acid and a little arabin. The sulphide of lead obtained on decomposing these precipitates, contained some products of oxidation and a little yellowish resin. The filtrate after removing the lead, evaporating and treating with alcohol, separated uncrystallisable sugar and a gummy organic lime salt; more alcohol removed a pectinate. The filtrate evaporated and treated with ether, separated grape sugar, and the filtrate left on evaporation groups of sublimable warty crystals, and a thick liquid which, on evaporating spontaneously over sulphuric acid, left white needles, soluble in alcohol, somewhat less in ether and water, more freely in alkalies; they are the bitter principle, but are destitute of alkaline properties. The thus exhausted wood yielded nothing of interest besides an acid and neutral resin, to acidulated and alkaline water, alcohol, and ether. The wood left 4·5 to 5 per cent. ashes consisting of carbonate of lime with little chloride of magnesium and sulphate of lime.—*Amer. Journ. Pharm.*

Aspidine is the name given by Pavesi, of Mortara, to the following preparation containing the active principle of the root of male fern. 1 kilogr. of recently dried powdered root is displaced by alcohol and then by water; the two liquids are mixed, the alcohol distilled off, and the residue boiled for a few minutes with 75 grm. slacked lime. After twenty-four hours' rest, the precipitate is washed with water, dried and exhausted by boiling alcohol; the solvent is evaporated when an oleo-resinous substance is left, possessing an acrid bitter and nauseous taste. It may be given in pills or in alcoholic and ethereal solution.—*Amer. Journ. Pharm.*

Correspondence

To the Editor of the Chemist and Druggist.

CHLOROFORMIC SOLUTION OF GUTTA PERCHA.

18th March, 1862.

Sir,—I have just seen the February number of the *Chemist and Druggist*, containing the formula for a "Chloroformic solution of Gutta Percha." Some months ago having seen the same formula in an American journal, I followed the directions there given, but failed to obtain like results, in fact the solution had lost very little of its colour from the process, although it was repeated twice with the same Gutta Percha.

A much better, simpler, and less expensive process for obtaining an almost colourless solution, is by simply adding as much Chloroform to the Gutta Percha as will make a thick paste. This paste is then placed in very hot water, and kneaded with the fingers. After considerable manipulation the Gutta Percha loses much of its colour, and if this process is repeated, becomes very nearly colourless, having only a pale straw tint. A Chloroformic solution may then be made of any strength, which is useful for many purposes—when thin, as a substitute for court plaster, and when thick, as a stopping for decayed teeth. The quantity of Chloroform used at first is of course lost, but this is very small; while that in the American receipt is enormous. As a colourless solution of Gutta Percha is a desideratum, I trust you will excuse the length of this communication.

Yours, &c.,
J. M. M.

ON THE ARRANGEMENT OF OUR SHOPS.

Islington, April 7th, 1862.

Sir,—In the February number of the *Chemist and Druggist*, under the head "Correspondence," there is a letter from Mr. Watson, of Birkenhead, directing the attention of your readers to the above subject.

Having been engaged during the last three or four years in the temporary management of Chemists' businesses, and having, during that time, been in all quarters of the metropolis, I have had frequent opportunities of seeing the need of some such general arrangement as your correspondent proposes.

The alphabetical plan he suggests is undoubtedly good as a basis to work upon; but I think, to make it more complete, an entire list of drugs and chemicals kept in stock should also be adopted as a reference in case of need. The list might be easily made to serve the purposes of an index and a price-book at the same time.

The necessity for such an addition to Mr. Watson's arrangement arises from the fact that most chemists are obliged to keep articles of great importance in various places, in cupboards, in drawers, or behind other bottles—according to the convenience of their respective shops; and the only course left for a stranger to find the same, is to refer to the list.

I have attended to several businesses where the arrangement of the shops has been the one proposed by Mr. Goddard, of Leicester, in his price-book, and this plan appears to me to be superior to any other. Any chemist who may have occasionally to leave his business in strange hands, by adopting this plan, will insure both ease and safety to himself and the person he leaves in charge. It may be applied to any shop, whatever its peculiarities may be, and if strictly adhered to, the chemist has the advantage of seeing the cost and retail price of the article required, while he discovers its exact position in the shop.

Yours truly,
Thomas Heathcoat.

COATING PILLS.

Southampton, April 4, 1862.

Sir,—A deal has been said of late about "Coating Pills," and rendering them "tasteless." I have tried the several processes submitted to the trade, from time to time, and as far as my experience goes, not one of them answers the purpose described, particularly if the pills are made with any of the alkalies; most certainly if made with calomel they will, in a short time, so far deliquesce as to stick together, and thus appear as if they had been made up a long time, or kept in a damp place.

I must, therefore, Mr. Editor, until some more satisfactory plan can be given, look upon them all as comparatively worthless, and come to the conclusion that not one of them is superior to the old custom of the Pulv. Glyc. Decort.

Yours very truly,
George Manley.

Edinburgh.

Sir,—I beg to inform you that my process for coating pills was provisionally patented in April, 1861, and was renewed, and that you are wrong in stating it to be public property.

Your obedient Servant,
R. C. Furley.

[We think Mr. Furley ought to have stated when the patent was renewed.—Ed.]

NOTES AND QUERIES

Dialysis. (C. J. B.)—The beautiful method of research devised by Mr. Graham was clearly explained by Dr. Noad in the pages of this journal eight months ago. See article entitled "Liquid Diffusion applied to Analysis," Vol. II., p. 235. The practical application of Dialysis will be noticed in an early number.

Back-ground for Photographs on Glass. (J. S.)—The best way of colouring a back-ground is to get it "flatted" by a good painter; but this is expensive. If not likely to be touched or brushed against, the best materials to use are whiting, lamp black, indigo, and size, mixed in such proportions that the resulting colour is a medium slate. The great fault of amateur photographers is in making their back-grounds too light.

Tinct. Rhei. Comp. J. F. writes:—If your correspondent K. K. K. requires a formula cheaper than the officinal one, let me suggest the following, which is very good and quite equal in medicinal virtue to that of *P. L.*:—Take of Rad. Rhei. E. I. ℥ijss; Suc. Solazzi ℥ss; Rad. Zingib. ℥ss; Gran. Parad. ʒj; Rad. Curcumæ ʒij—all in coarse powder—with Sp. Vini Ten. Oij. Percolate or macerate.

Vermilion Ink in Colour-printing. (J. S. H.)—We quite understand your dilemma, but cannot suggest a course for you to pursue. There is no colour which will take the place of vermilion, and we know of no metal capable of resisting the corrosive action of the pigment. Vermilion is, in chemical language, a sulphide of mercury, that is a compound of sulphur and mercury in equivalent proportions, and all the metals adapted for engraved plates are attacked by one or other of these elements. If the use of wood-blocks is not precluded by your process, we think you had better discard metal for printing vermilion. We have not practically tested the action of the pigment, and trust you will regard these conclusions as merely theoretical.

Medical Hall. (W. L. H.)—The mere styling of a chemist's shop "Medical Hall" is no infringement of the law.

Stamp Duty. (G. C.)—The label forwarded to us, "Compound Tincture of Quinine, &c.," would, we are of opinion, subject the preparation to stamp duty.

(J. H. T.)—The two labels have been submitted to our legal adviser, who considers that the use of both would render the articles subject to stamp duty.

(A. B. C., Carlisle.)—The use of a label claiming a proprietorship in these "Cough Cakes" would render the article liable to stamp duty.

("Egmanton.")—The pills bearing the label will be liable.

The Sale of Spirits. (A Chemist's Assistant, Aberdeen.)—Your first question is too vague for a definite legal opinion. The sale of Sp. Vini Rect. mixed with a drop or two of Tinct. Camph., under the name of "Camphorated Spirits of Wine," without a licence, involves an evasion of the law, which, we think, could not be upheld if the Excise interfered.

Colours for Show Bottles.—A subscriber has anticipated us in the application of the new dyes to show bottles. He has had a solution of Magenta in one of his globes for about nine months. He has also had, for the same time, a green made from Morgan Brothers' domestic dye. Both are very brilliant, and have kept well. The window has a northern aspect.

White Oils.—(T. F. R.)—The following formula is given in Redwood's *Gray's Supplement*:—Distilled Vinegar, 1½ pint; Oil of Turpentine, 1½ drachm; Spirits of Wine, 1½ oz.; Goulard's Extract of Lead, ½ oz.; Whites and Yolks of Two Eggs; mix the Turpentine and Goulard with the Eggs, gradually add the Vinegar, and lastly the Spirit.

Sugar-coated Pills.—Can any of our readers give J. F. directions for coating pills with sugar—the covering to be hard and smooth, similar to that of the American Indian Sugar-coated Pills, or of the ordinary Comfits? The subject of coating pills is considered in an article printed in our last volume, page 83. The writer there states that there is no good way of giving the desirable surface to these sugar "draggees" without the application of carefully regulated heat.

Syr. Ferri et Quinæ Iodidi.—We shall be glad to receive a formula for this preparation.

TRADE REPORT.

Chemicals have been rather more in demand, and in some cases higher prices are paid. Tartaric Acid has sold at 1*s.* 8½*d.*, but is now quieter. Sales have been made in Citric Acid at 1*s.* 9*d.* More doing in Oxalic Acid, and the best quality is firm at 10*d.* Bichromate is dull at 8¼*d.* to 8½*d.* Prussiate of Potass in moderate demand at 12½*d.* Sal Acetos is better; sales made at 12*d.* An extensive business has been done on speculation in Iodine; the price rose from 4½*d.* and 4¾*d.* to 6½*d.* and 7*d.* The market is now quieter at 6*d.* to 6¼*d.* Soda Ash is quiet at 2*d.* to 2⅛. Soda Crystals quiet at £4 7*s.* 6*d.* to £4 10*s.* *ex* ship. A large business done in Bleaching Powder at 9*s.* 6*d.* to 10*s.*, now 10*s.* to 10*s.* 6*d.* asked. Flour of Brimstone steady at 13*s.* 6*d.* up to 16*s.* according to quality. Sulphate of Copper is slow at 33*s.* to 34*s.* Cream of Tartar is quiet at 127*s.* 6*d.* for fine. Canada Pot and Pearl Ashes are slow at 34*s.* Some first sort New York sold at 32*s.* A good business has been done in Linseed Oil, and the price is now firm at 37*s.* here, and 34*s.* 3*d.* for the last 4 months. Saltpetre is again better. Sales of British refined at 42*s.* to 42*s.* 6*d.* Turpentine is dull, and prices are almost nominal at 68*s.* for American, and 67*s.* for French. Rosin is lower; sales of common made at 12*s.* 6*d.* to 13*s.* per cwt. In other articles no change.

The public sales of drugs during the month have been small, but there has been a fair business transacted by private contract. Sales of Ipecacuanha have been made at 6*s.* 9*d.*, and now 7*s.* asked. Malabar Cardamoms have advanced to 6*s.*, at which price several parcels sold. Large sales of Cochineal have been made at an advance of 2*d.* or 3*d.* per lb. Sulphate of Quinine is rather lower. Peliters selling at 7*s.* Large parcels of Peruvian and Carthagena Bark have been sold at 4*d.* to 6*d.* per lb. higher rates. Saffron is rather easier. Small sales of fine Turkey Opium have been made at 14*s.* 6*d.* to 15*s.* 6*d.* About 200 bales of Tinnivelly Senna sold at prices ranging from 3½*d.* to 7¾*d.*, and very common 1½*d.* to 2½*d.*; a few lots of fair Bombay sold at 2¼*d.* to 2½*d.* Cubebs are quiet at 115*s.* to 120*s.* Fine Castor Oil is ¼*d.* cheaper; about 1,000 cases have been sold at 5¾*d.* to 6*d.* for pale yellow up to 6¾*d.* for good pale seconds. Oil Aniseed is 3*d.* dearer; last sales made at 5*s.* 7½*d.* to 5*s.* 9*d.* Oil Cassia is 3*d.* higher; a few cases brought 9*s.* Citronelle steady at 4½*d.* to 4¾*d.* per lb. 66 bales Cuscus realized 65*s.* to 66*s.* per cwt. There is no change in Gums. Shellac is rather more in request. Some fine dark Garnet sold at £9 7*s.* 6*d.*, fine DC Orange £10 2*s.* 6*d.* to £10 5*s.* Cutch is steady. Fair Pegue 27*s.* to 27*s.* 6*d.* Gambia quiet at 17*s.* 6*d.* to 17*s.* 9*d.* No sales of Camphor. Some parcels of Sarsaparilla have been sold at former rates. Roll Annatto sold at 4½*d.* to 4¾*d.* A parcel of good Tonquin Musk sold at from 26*s.* 9*d.* to 30*s.* 9*d.* Aloes are without change. Rhubarb is steady; sales of ordinary to fair made at 1*s.* 1*d.* to 2*s.* 8*d.* Galls steady. Turmeric is quiet and rather easier. Bees-wax small sales at former prices. In other goods no change.

PRICE CURRENT.

☞ *These quotations are the latest for* ACTUAL SALES *in Mincing Lane. It will be necessary for our retail subscribers to bear in mind that they cannot, as a rule, purchase at the prices quoted, inasmuch as these are the* CASH PRICES IN BULK. *They will, however, be able to form a tolerably correct idea of what they ought to pay.*

	1862.				1861.			
	s.	d.	s.	d.	s.	d.	s.	d.
ARGOL, Cape, pr ct.	97	6	102	6	100	0	110	0
French	60	0	..85	0	60	0..	85	0
Oporto, red	46	0	..50	0	50	0..	51	0
Sicily..............	65	0	..80	0	85	0..	90	0
Naples, white.....	65	0	..80	0	85	0..	90	0
Florence, white...	90	0	100	0	95	0	105	0
red....	85	0	..87	6	95	0..	97	6
Bologna, white....	115	0	120	0	125	0	130	0
ARROWROOT, duty 4½ per cwt.								
Bermuda ...per lb.	0	10 ..	1	4	1	0..	1	4
St. Vincent.........	0	3 ..	0	5½	0	2¼	0	6
Jamaica.	0	2½..	0	4	0	2½	0	4¼
Other West India.	0	2 ..	0	3¼	0	2..	0	3¼
Brazil..............	0	1½..	0	2	0	1½	0	2¼
East India........	0	1½..	0	2½	0	1¾	0	2½
Natal.............	0	3 ..	0	7½	0	2½	0	6¼
Sierra Leone......	0	2½..	0	3	0	2½	0	3½
ASHES.....per cwt.								
Pot, Canada, 1st sort	34	0 ..	0	0	32	6..	0	0
Pearl, do. 1st sort.	34	0 ..	0	0	34	0..	0	0

	1862.				1861.			
BRIMSTONE,	s.	d.	s.	d.	s.	d.	s.	d.
rough......per ton	145	0	147	6	190	0	0	0
roll...............	260	0	0	0	280	0..	0	0
flour..............	260	0	310	0	330	0	350	0
CHEMICALS,								
Acid—Acetic, pr lb	0	4 ..	0	4½	0	4..	0	4½
Citric	1	9 ..	1	9½	1	11..	0	0
Nitric	0	3½..	0	4	0	5..	0	5½
Oxalic........	0	9½..	0	10	0	8½	0	9
Sulphuric	0	0¼..	0	0	0	0¾	0	1
Tartaric crystl	1	8¾..	1	8½	1	11..	1	11½
powdered.	1	8½..	0	0	2	0..	0	0
Alum .....per ton.	135	0	140	0	125	0	135	0
powder	150	0	0	0	150	0..	0	0
Ammonia. Crb. lb.	0	5 ..	0	6	0	5½	0	6
Sulphate per ton	270	0	290	0	280	0	290	0
Antimony, ore	260	0	280	0	320	0	340	0
crude, per cwt	26	0	..28	0	30	0..	40	0
regulus	49	0 ..	0	0	50	0..	0	0
French star...	47	0 ..	0	6	51	0..	0	0
Arsenic, lump....	17	6	..18	6	17	0..	18	0

PRICE CURRENT—*continued.*

	1862.				1861.			
CHEMICALS.	s.	d.	s.	d.	s.	d.	s.	d.
Arsenic powder	8	0	10	0	8	6	10	0
Bleaching Powder.	9	0	9	6	10	0	10	6
Borax, E. I. refind	52	6	0	0	0	0	0	0
British	62	6	65	0	65	0	0	0
Calomel....per lb.	2	10	0	0	2	10	0	0
Camphor, refined.	2	6	3	2	2	3	0	0
Copras. grn. pr. tn.	60	0	65	0	65	0	0	0
Crrsiv. Sublmte. lb	1	11	2	0	2	0	0	0
Green Emrld. pr. lb	0	9	0	11	0	9	1	0
Brunswk. cwt.	14	0	42	0	14	0	42	0
Iodine, dry, pr. oz.	0	6¼	0	6½	0	4¾	0	5¼
Magnesia Crbn. ct.	40	0	45	0	42	6	45	0
Calcined, lb.	1	6	0	0	1	6	0	0
Minium red, pr. ct.	21	6	23	0	22	6	23	0
orange	33	0	35	0	35	0	0	0
Ptsh. Bichrom. lb.	0	8¼	0	0	0	9¾	0	10
Chlorate	0	10½	0	11	0	10¼	0	10½
Hydriodate oz.	0	4¾	0	5¼	0	5¼	0	0
Prussiate ..lb.	1	0½	0	0	1	1	1	2½
red	2	1	2	2	2	2	0	0
Precipit. red pr. lb	2	9	2	10	2	9	0	0
white	2	9	2	10	2	10	0	0
Prussian Blue	1	6	1	10	1	6	1	10
Rose Pink....pr ct.	29	0	30	0	29	0	30	0
Sal-Acetos...pr lb.	0	11½	1	0	0	10½	0	11
Ammoniac, ct.								
British	36	0	38	0	32	0	33	6
Epsom	8	0	8	6	8	3	8	6
Glauber	4	0	5	6	4	6	5	6
Soda, Ash, pr deg.	0	2	0	2⅛	0	2¼	0	2½
Bicarbonate ..ct.	12	0	0	0	13	0	14	6
Crystals per ton.	87	6	90	0	90	0	95	0
Sgr. Lead, whte, ct.	37	0	38	0	38	0	39	0
brown	27	0	28	0	28	0	0	0
Slphte. Quinine oz								
Britsh in bttl.	8	0	0	0	7	8	8	0
Foreign	7	0	7	3	6	6	7	0
Sulpht. Zinc ..cwt.	14	6	15	0	14	6	15	0
Verdigris........lb.	1	3	1	5	1	3	1	5
Vermillon, English	3	0	3	4	3	0	3	4
China	2	6	2	8	2	6	2	8
Vtrl. blue or Romn. per cwt.	35	0	36	0	32	0	33	0
COCHINEAL, pr. lb.								
Honduras, black	2	8	4	2	3	0	4	10
silver	1	8	3	2	2	3	3	4
Mexican, black	2	8	3	0	3	0	3	6
silver	2	6	2	8	2	8	2	10
Lima	2	7	3	9	2	10	3	7
Teneriffe, black	2	9	3	4	2	11	3	9
silver	2	7	2	9	2	7	2	10
DRUGS,								
Aloes, Hepatic, ct.	130	0	200	0	70	0	190	0
Socotrine	160	0	480	0	110	0	480	0
Cape, good	40	0	42	0	42	0	47	0
inferior.	20	0	36	0	30	0	40	0
Barbadoes	60	0	420	0	40	0	470	0
Ambergris, gray. per oz.	35	0	38	0	34	0	40	0
Angelica Root, ct.	20	0	35	0	28	0	40	0
Aniseed, China str.	70	0	78	0	70	0	80	0
German, &c.	22	0	42	0	32	0	40	0
Balsam Canada, lb	1	3	1	4	1	3	0	0
Capivi	1	9	1	10	1	11	2	2
Peru	4	6	4	7	4	5	4	7
Tolu	3	10	0	0	4	0	4	3
Bark Cascarilla ct.	25	0	49	0	24	0	49	0
Peru crown & grey per lb	1	2	2	6	1	7	2	8
Calisaya, flat	3	10	4	7	3	9	4	0
quill	3	10	4	2	3	6	3	10
Carthagena	1	2	2	6	1	2	2	0
Pitayo	1	10	2	9	1	6	2	3
Red	2	6	6	0	2	0	6	0
Bay Berries, pr ct.	22	0	40	0	22	0	40	0
Bucca Leaves, lb.	0	3	1	3	0	4	1	3
Camomile Flowers	40	0	75	0	40	0	90	0
Camphor, China	200	0	0	0	195	0	210	0
Canella Alba	19	0	40	0	22	0	42	0
Cantharides, pr lb.	2	4	0	0	2	2	2	4
Cardamoms. Mlbar. good	5	9	6	0	4	10	4	11
DRUGS.	s.	d.	s.	d.	s.	d.	s.	d.
Cardamoms, inferior	4	10	5	8	4	4	4	6
Madras	3	6	5	9	2	7	4	0
Ceylon	4	8	4	10	3	6	3	10
Cassia Fistula pr ct.	20	0	32	0	20	0	35	0
Castor Oil, 1st pale, lb	0	6½	0	7	0	5¾	0	6¼
second	0	5½	0	6½	0	5½	0	5¾
infr. & dark	0	4¾	0	5½	0	5	0	5¼
Bombay. in csks.	0	4½	0	5	0	4½	0	4¼
Castorum	1	0	26	0	1	0	28	0
China Root, pr ct.	9	0	10	0	9	0	10	0
Coculus Indicus	14	0	0	0	12	0	13	0
Cod-liver Oil, gal.	4	9	6	0	4	9	5	6
Clcynth. apple, lb.	0	7	1	0	0	10	1	4
Colombo Rt. pr ct.	15	0	52	6	15	0	47	0
Cream Tartar, pr ct.								
French	127	6	130	0	130	0	0	0
Venetian	127	6	130	0	132	6	0	0
grey	112	6	120	0	122	6	125	0
brown	105	0	110	0	115	0	117	6
Croton Seed	63	0	70	0	90	0	105	0
Cubebs	110	0	120	0	130	0	140	0
Cummin Seed	45	0	48	0	36	0	40	0
Dragon's bld. reed.	160	0	240	0	140	0	280	0
lump	70	0	200	0	100	0	260	0
Galangal Root	16	0	40	0	26	0	28	0
Gentian Root	17	0	19	0	14	0	18	0
Guinea Grains, per cwt.	50	0	53	0	47	0	48	0
Honey, Narbonne.	60	0	85	0	70	0	95	0
Cuba	28	0	36	0	34	0	45	0
Jamaica	26	0	65	0	40	0	60	0
Ipecacuanha, pr. lb.	6	9	7	0	3	4	3	7
Isinglass, Brazil	0	10	3	10	1	8	4	0
East India	0	9	3	0	1	4	3	8
West India	3	0	3	9	3	6	3	9
Russian	9	6	13	0	9	6	13	0
Jalap	4	0	5	0	4	4	4	9
Jniper Berries cwt.								
German & Frnch	9	0	11	0	10	0	10	6
Italian	10	0	12	0	9	6	12	0
Lmon Juice, pr deg.	0	0½	0	0⅞	0	1	0	0
Liquorice, per cwt.								
Spanish	88	0	90	0	83	0	90	0
Italian	85	0	95	0	85	0	95	0
Manna, flaky	2	6	0	0	3	3	3	9
small	1	6	1	9	1	6	2	0
Musk......per oz.	20	0	34	0	26	0	34	6
Nux Vomica	8	0	9	0	9	6	10	0
Opium, Turkey	12	0	15	6	16	6	17	0
Egyptian	6	0	10	6	6	0	13	0
Orris Root, pr cwt.	27	0	29	0	27	0	29	0
Pink Root, per lb.	1	10	2	2	1	2	1	4
Quassia (bit. wd) ton	70	0	80	0	70	0	80	0
Rhatania Root, lb.	0	4½	0	8	0	9	1	0
Rhbrb. China, rnd.	0	9	2	10	1	0	2	8
flat	1	3	3	0	1	2	3	0
Dutch, trmd.	3	6	4	0	3	3	3	6
Russian	11	6	0	0	11	6	0	0
Saffron, Spanish	40	0	42	0	52	0	55	0
Salep ....per cwt.	170	0	190	0	260	0	280	0
Sarsaparilla, Lima	0	9	1	3	0	10	1	2
Para	0	10	1	2	0	10	1	2
Honduras.	0	10	1	4	0	11	1	6
Jamaica	1	5	2	3	1	3	2	5
Sassafras ..per cwt.	11	0	12	0	10	0	12	0
Scammony. per lb.								
virgin	28	0	36	0	28	0	34	0
second	14	0	24	0	14	0	24	0
Seneka Root	2	4	2	6	2	2	0	0
Senna, Calcutta	0	1½	0	2½	0	1½	0	2½
Bombay	0	2½	0	4	0	2½	0	2½
Tinnevelly	0	3	1	6½	0	2½	0	10½
Alexandria	0	3½	0	6	0	4	0	6
Snake Root	2	0	0	0	1	2	1	8½
Spermaceti, refined	1	0	1	2	1	2	1	4
Squills	0	1	0	0	0	1	0	2
Tamarinds, E. Ind.	10	0	13	0	9	0	12	0
W.I. per cwt.	15	0	32	0	16	0	35	0
Valerian Root, Eng	20	0	40	0	20	0	40	0
Terra Japonica—								
Gambier, cwt	17	0	17	6	16	6	17	3
Cutch, cwt	26	0	27	6	24	0	25	0

PRICE CURRENT—*continued.*

	1862.				1861.			
DRUGS	s.	d.	s.	d.	s.	d.	s.	d.
Vanilla, Mexican lb	25	0	..55	0	30	0	..70	0
Wormseed, pr cwt.	2	0	.. 0	0	1	0	.. 0	0
GUM. .... per cwt.								
Ammoniac, drop..	90	0	120	0	50	0	100	0
lump ..	15	0	..55	0	15	0	..35	0
Animi, fine pale ..	300	0	320	0	290	0	310	0
bold amber.	200	0	280	0	260	0	270	0
medium....	170	0	200	0	170	0	230	0
small & dark	100	0	125	0	100	0	160	0
ordinry dark	40	0	..80	0	50	0	100	0
Arab. E.I. f. pale pkd	50	0	..57	0	50	0	..55	0
unsortd, good to f	32	0	..45	0	38	0	..48	0
red and mixed	20	0	..30	0	28	0	..34	0
siftings	0	0	.. 0	0	18	0	..23	0
Turkey, pkd. gd to f.	105	0	160	0	110	0	150	0
second & infr.	40	0	100	0	42	0	105	0
in sorts	30	0	..40	0	30	0	..43	0
Gedda............	26	0	..29	0	26	0	..27	0
Barbary, white ..	32	0	..38	0	30	0	..33	0
brown ..	26	0	..28	0	29	0	..30	0
Australian......	26	0	..27	0	16	0	..18	0
Assafœt. fr. to gd.	30	0	110	0	20	0	..95	0
Benjamin, 1st. qual.	400	0	600	0	360	0	680	0
2nd qual	280	0	410	0	160	0	330	0
3rd ,,	50	0	190	0	60	0	150	0
Copal, Angola red.	100	0	120	0	100	0	125	0
pale.	95	0	105	0	85	0	100	0
Benguela....	100	0	115	0	90	0	110	0
Sierra Lne lb	0	9	.. 1	9	0	9	.. 1	9
Manilla pr ct	20	0	..40	0	15	0	..43	0
Dammar ple. pr ct	38	0	..50	0	44	0	..50	0
Galbanum........	140	0	160	0	120	0	160	0
Gmbge. pkd. pipe	140	0	180	0	120	0	150	0
in sorts.....	80	0	120	0	80	0	110	0
Guaiacum ..pr. lb.	0	7	.. 1	6	0	8	.. 1	9
Kino ....per cwt.	200	0	220	0	95	0	120	0
Kowrie...........	24	0	..30	0	18	0	..24	0
Mstic. pkd. pr lb..	6	0	.. 6	6	8	0	.. 9	0
Myrrh gd & fi pr ct	140	0	180	0	140	0	180	0
sorts........	70	0	150	0	80	0	130	0
Olibanum, pl. drop	60	0	..66	0	60	0	..70	0
ambr & yel.	40	0	..54	0	40	0	..54	0
mixd. & dk.	10	0	..26	0	12	0	..26	0
Senegal	38	0	..40	0	34	0	..38	0
Sandrac	75	0	105	0	90	0	110	0
Tragacanth, leaf..	180	0	340	0	190	0	340	0
in sorts.	100	0	130	0	100	0	126	0
OILS.......per tun.	£	s.	£		£	s.	£	s.
Seal, ...	32	0	..40	0	32	0	..40	0
Sperm, body......	93	0	.. 0	0	104	0	105	0
Cod..............	39	0	.. 0	0	36	10	.. 0	0
Whale, Greenland.	0	0	.. 0	0	0	0	.. 0	0
Sth Sea pale	35	10	..36	0	38	10	..39	0
E. I. Fish...	30	10	..32	10	29	10	..30	0
Olive, Galipoli, ton.	56	0	..57	0	60	0	.. 0	0
Florence, ½-chst.	1	1	.. 1	2	0	16	.. 0	0
Cocoant. Cochn. tn	49	0	..50	0	50	0	..50	10
Ceylon	48	0	..48	6	48	0	..49	0
Sydney	42	0	..47	0	44	0	..47	0
Ground Nut & Gin.								
Bombay........	44	10	..45	0	39	0	.. 0	0
Madras	44	10	..45	10	40	0	.. 0	0
Palm, fine........	41	10	..42	10	44	0	..44	6
Linseed	36	9	..37	0	28	0	..28	3
Rapesd. Engl. pale	47	6	.. 0	0	39	6	.. 0	0
brown.......	45	0	.. 0	0	37	6	.. 0	0
Foreign do ..	47	10	..48	0	40	0	..41	0
brown......	45	0	..45	6	36	6	..30	0
Lard	51	0	.. 0	0	63	0	.. 0	0
Tallow	37	0	.. 0	0	32	6	.. 0	0
Rock Crude	14	0	..16	0	0	0	.. 0	0
OILS, Essential—	s.	d	s.	d.	s.	d.	s.	d.
Almond essen. lb.	19	0	.. 0	0	30	0	..31	0
expressed..	0	0	.. 0	0	1	0	.. 0	0
Aniseed..........	5	9	.. 0	0	6	11	.. 7	0
Bay ....pr cwt.	130	0	140	0	122	6	.. 0	0
Bergamott, pr lb.	6	6	..14	0	6	6	..14	0
Cajeputa, bond, oz.	0	1½	.. 0	2	0	1½	0	1½
Caraway .....pr lb.	4	3	.. 6	0	4	3	.. 6	0
Cassia............	9	0	.. 0	0	10	0	.. 0	0
Cinamon (in b), oz.	1	0	.. 3	10	3	0	.. 4	3
Cinnamon Leaf...	0	2	.. 0	4	0	1	.. 0	2½

OILS.	s.	d.	s.	d.	s.	d.	s.	d.
Citronel..........	0	4½	.. 0	4¾	0	4¾	0	5¼
Clove	0	4	.. 0	0	0	4¼	0	0
Croton	0	3	.. 0	4	0	3	0	4
Juniper ....per lb.	1	10	.. 4	0	1	10	.. 4	0
Lavender	2	6	.. 5	0	2	6	.. 5	0
Lemon	5	0	..10	6	5	0	..10	0
Lemongrass, pr oz	0	5	.. 0	6	0	6	.. 0	7¼
Mace, ex	0	1½	.. 0	2	0	2	.. 0	2½
Neroli............	6	0	.. 9	0	6	0	.. 9	0
Nutmeg	0	1¼	.. 0	2½	0	1¾	0	2¼
Orange ....per lb.	6	6	.. 7	0	7	0	.. 8	0
Otto Roses, per oz.	14	0	..24	0	16	0	..24	0
Peppermint, pr lb.								
American	7	0	..13	0	7	6	..15	3
English	33	0	..38	0	35	0	..43	0
Rhodium ..per oz.	3	9	.. 6	0	3	9	.. 6	0
Rosemary..per lb.	1	10	.. 3	0	1	10	.. 3	0
Sassafras	3	6	.. 4	0	3	0	.. 3	6
Spearmint........	5	0	..12	6	5	0	..12	6
Spike	1	3	.. 1	6	1	3	.. 1	6
Thyme	1	9	.. 2	6	1	9	.. 2	9
PITCH, Brtsh, pr cwt.	7	0	.. 0	0	6	0	.. 6	3
Swedish	10	6	.. 0	0	10	3	. 0	0
SALTPETRE, pr cwt.								
Bngl, 6 p c. or under	38	0	..39	0	37	0	..38	0
over 6 per cent.	37	0	..37	6	34	6	..36	6
Madras	35	6	..37	0	32	0	..35	0
Bombay	34	6	..37	0	31	0	..33	0
British-refined....	42	0	..42	6	38	0	..39	0
Nitrate of Soda ..	14	0	..14	6	13	0	..13	0
SEED, Canary, pr qr.	40	0	..50	0	40	0	..48	0
Caraway, Eng, p. c.	23	0	..25	0	28	0	..30	0
German, &c	0	0	.. 0	0	26	0	..34	0
Coriander	15	0	..17	0	14	0	..17	0
East India......	0	0	.. 0	0	13	0	..16	0
Hemp............	44	0	..50	0	44	0	..46	0
Linseed, Black Sea	57	0	..60	0	50	0	.. 0	0
Calcutta........	59	0	..61	0	50	0	..51	0
Bombay	65	0	..66	6	53	6	.. 0	0
Egyytian	58	0	.. 0	0	49	0	. 0	0
Mustard, brn, p. bhl	7	0	..10	0	8	0	..12	0
white..	6	0	.. 9	0	8	0	..11	0
Poppy, E.I. per qr.	61	0	..62	0	57	0	..58	0
Rape, English	0	0	.. 0	0	0	0	.. 0	0
Danube	0	0	..70	0	60	0	.. 0	0
Calcutta, fine ..	66	0	.. 0	0	52	0	..53	0
Bombay,	68	0	..73	0	58	0	..61	0
Teel, Sesme or Gngy	66	0	..70	0	57	0	..64	0
Cotton.... per ton	150	0	.. 0	0	150	0	0	0
Gnd. Nut Krnels, tn	350	0	365	0	300	0	310	0
SOAP, Lnd. yel. pr ct.	21	0	..36	0	21	0	..38	0
mottled	34	0	..36	0	34	0	..38	0
curd........	50	0	.. 0	0	52	0	.. 0	0
Castile	38	0	..40	0	37	0	..40	0
Marseilles	40	0	..41	0	40	0	..41	0
SOY, China, per gal.	2	2	.. 2	7	2	6	.. 2	7
Japan	0	8	.. 0	10	1	0	.. 1	4
SPONGE, Turk f. pkd	20	0	..24	0	20	0	..26	0
fair to good	8	0	..18	0	9	0	..18	0
ordinary..	3	0	.. 6	0	3	0	.. 8	0
Bahama ..	0	4	.. 1	3	0	3	.. 1	0
TURPENTINE,								
Rough..per cwt.	23	0	.. 0	0	9	3	.. 0	0
Spirits, English ..	67	0	.. 0	0	30	0	.. 0	0
American, in csks	68	0	.. 0	0	31	0	.. 0	0
WAX, Bees, English	165	0	175	0	165	0	170	0
German	170	0	180	0	160	0	165	0
American	160	0	170	0	180	0	200	0
white fine	0	0	.. 0	0	200	0	210	0
Jamaica	170	0	180	0	190	0	200	0
Gambia	160	0	170	0	180	0	.. 0	0
Mogadore	120	0	160	0	125	0	150	0
East India........	140	0	170	0	150	0	170	0
ditto, bleached..	160	0	195	0	170	0	220	0
vegetable, Japan..	56	0	..75	0	57	0	..64	0
WOOD, DYE, per ton,								
Fustic, Cuba	160	0	165	0	180	0	190	0
Jamaica	105	0	.. 0	0	110	0	115	0
Savanilla	100	0	105	0	110	0	115	0
Zante	100	0	105	0	140	0	170	0
Logwood, Cmpchy	210	0	220	0	130	0	135	0
Honduras	135	0	140	0	0	0	.. 0	0
St. Domingo. ..	130	0	..0	0	100	0	105	0
Jamaica	120	0	..0	0	90	0	..95	0

PATENTS

The abridged Specifications of Patents given below are prepared specially for this Journal, by Mr. R. A. Brooman, from official copies supplied by the Government, and are, therefore, the property of the Proprietor of this Journal. Other papers are requested not to reproduce them without acknowledgment :—

2123. G. Nye. *Improvements in apparatus for administering injection in a continuous stream, also applicable as an eye douche and for other purposes.* Dated August 26th, 1861.

This relates to two arrangements of apparatus. The first consists of an apparatus in which a vulcanized india-rubber vessel fitted with air valves is affixed at the top of a reservoir intended to contain the water or other fluid, so that, by compressing the india-rubber vessel, air is forced into the reservoir, and the water or fluid projected from it in a continuous stream. The reservoir may sometimes be fitted with an injection tube, with stopcock, and working on a joint. In the second arrangement of apparatus, a metallic air vessel is employed, enclosing an induction pipe in which is a chamber fitted with a valve for opening and closing the eduction way ; at the bottom of the air vessel is secured a foot also fitted with a valve, and at the top of the air vessel is affixed a vulcanized india-rubber vessel, by the alternate compression and expansion or recoil of which, water or other fluid is forced into the air vessel, and thence projected through the outlet pipe in a continuous stream. The valve that opens and closes the eduction way is so arranged that it may be readily attained, removed, and replaced. *Patent completed.*

2293. M. A. F. Mennons. *An improved surgical instrument, applicable to the treatment of certain diseases of the urethral, vaginal, nasal, and other passages or cavities of the human body.* (A communication.) Dated Sept. 14, 1861.

This instrument is composed of a tube or rod, varying in form, material, and dimensions, according to its use, and having externally one or several longitudinal or spiral grooves, serving as receptacles or conductors to the medicinal substances which it may be necessary to convey into the diseased passages or cavity. *Patent abandoned.*

2037. A. F. Menard. *Improvements in tanning, and in the apparatus employed therein.* (A communication.) Dated August 15, 1861.

This consists—1, in the use of bark in bundles. 2. In the peculiar arrangement of the apparatus to be employed. 3. In the use of carbonic acid or other gas, whether the tanning is performed in a vacuum, by hydrostatic pressure, or by the old method. 4. In the mode of operating upon the skins in the vats by the injection of various gases, combined with electric and galvanic currents. 5. In placing the skins in calcareous, magnesious, aluminous, silicious, or ferruginous solutions, in which are injected various gases, in combination with an electric and galvanic current for the formation of substances required in tanning. 6. In the mode described for constantly preserving the strength of the tanning solution at any temperature or condition of the atmosphere, and preventing the formation of gallic acid by means of carbonic acid. 7. In the application of carbonic acid and other compounds of carbon to form chemical compounds with the mineral substances described. 8. In rendering leather more pliable and more impermeable to water, by the saponification of fatty matters with sulphurite of carbon. *Patent completed.*

Henbane.—This is the most popular and generally useful drug of its class. In 1,100 miscellaneous prescriptions examined by Mr. B. S. Proctor, it occurred in 162 ; whereas opium in all its forms, including chlorodyne and preparations of morphia, but not including external applications and preparations from poppyheads, occurred in 133 ; hemlock and belladonna being comparatively of very rare use. The 162 prescriptions containing henbane were divided into two classes, those in which it was apparently given for the sake of preventing the griping of colocynth, &c., and those in which the henbane was judged to be administered for its own therapeutic action. The former numbered 96, and the latter 66, of which 16 were extract—the dose varying from half a grain thrice a day to five grains at night—the remaining 50 were tincture, the dose varying from four minims occasionally to forty minims thrice a day. In the former class, where the henbane was corrective of the action of other drugs, the dose varied from one-sixth to four grains.